May 8-14 1987 Vol 6 No 18 60p

POPULAR Computing WEEKLY

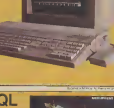
Atari plans research facility in Europe

Details on page 6

Superbase for the Atari ST

Communicating on your PCW

The rise and rise of computer fraud







THE QL

Desktop publishing

Graphics



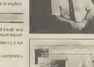

CHOLO
FIREBIRD
GOLD

May 8–14

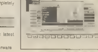
CONTENTS

POPULAR **Computing** WEEKLY

News



Features

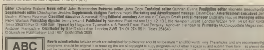


Supplement – the QL

Programming



Games



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ABC

How to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles and any accompanying programs should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here so please do not be tempted. We cannot guarantee to return your programs so please do not send your only copy. **Accuracy** *Popular Computing Weekly* cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work

Popular Computing Weekly. Tel: 01-437 4343.

In defence of the small dealer

In reply to your correspondent D W Snelson in the April 10 issue I would like to offer a contrasting set of experiences. First of all I will admit to being a very basic user of the Commodore 64 and a regular reader of your magazine. This perhaps is what saved me from making the same mistakes he did.

Like Mr Snelson I started the year with a resolve to upgrade to a 16 bit machine and as there seemed to be only one at an affordable justifiable price I also decided on the Atari 520 ST.

I spoke to Silica Shop asking what I thought were simple questions about such matters as the voltage of the power supply (I've already had to repair the C64 PSU once and it's on the way out again) the frame and scan rates of the monochrome monitor and whether the RGB output was TTL or linear. The person I spoke to didn't know. I spoke to the Atari Helpline. Nobody there knew either!

In desperation I spoke to a North East London dealer. He [illegible] thereupon a service manual was opened and all my questions were answered. I was also told the answers to all Mr Snelson's questions such as just what was bundled with the machine and the prices of all the third party disc drives etc. I was given such a good picture that I decided not to buy yet. [illegible] still waiting for the Amiga/ST battle to sort itself out a bit more. If I do buy an Atari I know where from.

I suppose the moral is the old one of let the buyer beware and let him choose a good dealer!

F McClelland
London SE10

No printer problems here

I refer to Kenn Garroch's reply to W L Pershore in April 10 issue of *Popular*.

I have had experiences with a number of QL and printer set ups and can report that with Epson and compatible printers (eg Shinwa CP80 and clones) there is generally no problem in running at 9600 baud if using the serial link. The most printer problems I find arise whilst attempting to configure *Quill* and the other Psion programs to run with a specific printer.

The Brother M1109 used by Mr Pritchard seems to be a different kettle of fish: one of my friends recently purchased one and could not get it to work at all. The problem was resolved by making up a special cable which I believe had pins 4 5 6 and 8 linked together. This information should be checked with Brother which my friend found most helpful. It could be Mr Pritchard has a handshaking problem if one of these lines is not connected.

The printers I have dealt with have never required these connections to make them work and I suspect a large number of printer cables sold do not incorporate them.

Tony Cox
Dunstable

Escaping from the Organiser

With reference to the Psion Organiser program Exchange which you published in *Popular* April 3.

The program as listed will form an endless loop when run which could be rather frustrating for a beginner who may not know how to escape.

The solution is to add a Quit option to the menu on line five and tag the following line on to the end of the program just before the ENDIF statement.

```
IF M%=4 STOP
```

Mike O Regan
IPSO group

Long live the Stone Age

I would like to present my response to Farewell to the cassette (Ziggurat April 17 '87).

I have owned a 16K Spectrum and cassette recorder for four years and during that time I have only lost [illegible] cassette. not bad for a prehistoric system.

In October last year I decided to upgrade to a disc system after being enlightened [illegible] speed reliability convenience etc.

During the six weeks that followed I had two drives both of which were sent back twice for a total of three weeks, programs mysteriously wiped out, valid disc commands rejected, discs formatted when I tried to save a program and only two programs which saved properly.

Not surprisingly I decided to get a refund – reliability and convenience being replaced with unreliability and inconvenience!

Disc drives and discs may not be that expensive but for the Spectrum at least they're about five times more expensive than cassette recorders and cassettes.

The ST and Amiga are in the business/upper home sector of the market so who would expect them to have a cassette interface?

Last week I bought a Spectrum 128 and unless Amstrad produces a very reliable cheap disc upgrade for compatibility with the Plus 2 I would rather wait 15 minutes for a program to load than face a possible disc drive style fiasco.

Finally Mr Shepherd I am not as your article would suggest a crazy person using a prehistoric clunker manufactured by a madman but somebody who has had experience of both cassettes and discs and trusts cassettes more.

David Banks
Preston

Forum for discussion

I would be grateful if you could mention a magazine on cartridge for the QL.

It is called *Forum* and issue two is available by sending 50p, a stamped addressed envelope and a blank formatted cartridge to Ian R Bruntlett at 25 The Broadway, High Barnes, Sunderland SR4 8LP.

Ian R Bruntlett
Sunderland

The vanishing disc drive

The special feature on consumer rights (April 17) will have been of interest to many readers although it gave the impression that most problems are encountered with small computer shops and mail order outlets.

My major headache concerns a high street store better known for selling aspirin than computers.

Last summer I bought a Micro Peripherals disc drive and interface for my QL. After three months of moderate use the interface developed a fault so I returned it to a branch of the supplier.

Over three and a half months later the unit was returned (first the interface then the disc drive a week later) in a worse condition than when it was taken in for repair. The disc drive rattled and would no longer read my double sided discs.

The drive is now with the chain's head office. I have been without the use of it for four and a half months out of the last eight and can still see no prospect of a refund or replacement. Surely this is totally unreasonable behaviour on the part of a national chain store.

Michael L Jackson
Burton on Trent

The Amiga vs Atari ST debate continues

I would be grateful if you could give me some advice on the Amiga 500 vs Atari ST debate. I have £600 to spend on one of them and require stunning graphics, great sound and a huge amount of software to choose from.

Do the ST and Amiga 500 both have these attributes? Are they both good for playing games on? Will more software be written for them (ie the QL died because of little interest from software houses)?

George McGuckin
Glasgow

Both the Amiga 500 and ST have graphic capabilities far superior to those on 8 bit machines. The sound chip in the Atari ST is the AY38910, while this is the same chip as in the Amstrad 464, for example, the sound potential on the ST are greater, thanks to its Midi connections. The Amiga contains a custom sound chip and also has the option of stereo output.

Neither machine has a huge software base as yet. While the list of software available is growing for both machines, in the UK at least, the ST is ahead in this respect at the moment.

The machines are both "good" for playing games on, though you should bear in mind that games playing is not entirely what Commodore and Atari had in mind when designing them. Should you wish to turn to more business orientated applications

later, both will be suitable

We believe that software companies will continue to write in ever increasing numbers for the Amiga and ST. Most major houses already include at least the ST in their plans for future releases, and when the Amiga 500 becomes available in the shops later this year, it should be gradually included as well in companies' plans.

Repairing points

Having read your April 10 issue I feel prompted to write regarding a couple of points.

Firstly the item in News Desk regarding Amstrad, the BBC and the PC1512.

I run the computer department of a large high street store. We have a PC1512 with double drive and colour monitor on display.

This machine is on from 9.00am in the morning until 5.30pm (8.00pm on Thursdays) six days a week. It has never shown any sign of overheating and we have never had any problems with it (apart from when the clock batteries were flat!)

All our customers who have purchased one from us have been satisfied and we have had no bad feedback from any of them.

Secondly I would like to congratulate John Anderson (Letters April 10). This man has achieved the impossible! He has actually managed to get a phone call through to Verran!

Tell me, how did you do it? Every time I phone the line is engaged. On the rare occasions that I have got through I too have come up against the waiting for parts for Commodore machines and many of those returned to me repaired have gone faulty again shortly after.

Of course the customer doesn't seem to realise that this is not my fault so I bear the brunt of their temper.

On the whole though I would like to say that the service from Verran is satisfactory and it is not all that often that I have to contact them.

One more point I would like to make is that Amstrad computers are by far the most reliable available at the moment. Since we started dealing with the Amstrad range we have had none back from the PCW and PC range and of the CPCs we only ever had one 6128 monitor returned.

This was returned to Amstrad by us for repair and to our surprise a brand new monitor was delivered a week later. Surely that speaks for itself.

Name and address supplied

The battle of the computers

I am writing with regard to the test made by Alastair Watt in Letters March 20. In his test Mr Watt stated that the Amstrad PC showed incredible timings for drawing and calculating on the screen. Well I have done the same test with my Atari ST and GFA Basic and frankly I think the PC1512 is far from dramatic as Mr Watt would have you believe.

The time on my ST was 14.1 seconds. Timing for the Spectrum showed 414 seconds and the so called famous Amstrad PC 56 seconds. In other words the ST was 29 times faster than the Spectrum and four times quicker than the PC. If you consider the fact that Basic is perhaps the worst language to use on a 16–32 bit micro (in terms of speed that is) the reaction of Tramiel in saying that PCs are more than dated is logical.

The support Amstrad has had from the British press is unequalled in any other country. And so it is not difficult to maintain a so-called majority in the British computer world.

But look dear readers at what kind of machines you have bought. Spectrums which are completely out of the top 10 in Europe (even MSX is outselling them many times). CPC models which use weird 3 inch discs and with very expensive options to change monitors. Not to mention all those users who had to upgrade from 464 to 664 to the 128K version to the PCW Joyce.

I think it is time that British users come out of their national views of the computer industry and see what the rest of the world has to offer. MSX 2 is good and so are the Amiga and the ST. On the ST I have now five operating systems: GEM TOS, CP/M, MS DOS (in soft), the Macintosh (in soft – from Germany and far more compatible than the famous emulator) and OS 9.

I agree that you could stick with your old Speccy but upgrading it for a PC is like selling a bike to use the local bus.

Now why are there so many business users out there who stick with old MS DOS? Well it means they are salesmen with no knowledge on the subject. So they are buying local bus tickets for the price of a Jaguar. It's not their money of course. No it's yours.

Benny Bosmans
Belgium

We're sorry but Popular Computing Weekly cannot guarantee to reply to all letters requesting a personal answer. It helps us enormously if readers are prepared to have general queries answered on these pages so if possible please do not send SAEs.

Last week we printed the first token and order form for the *Popular/Simmons* Spectrum Micro Source offer. Here is the second and last token you need to send for yours.

Popular/Simmons Micro Source special offer

Token No. 2

Forcing black's queen

The readers' latest move in Game Two of the *Colossus* chess tournament is to attack black's queen with their bishop forcing *Colossus* to move its queen to [illegible].

Casting your vote

How would you continue the readers' attack? Send your suggested move to *either* Inter-Mediates (*Popular Chess*) Freepost, Sawbridgeworth, Herts CM21 9YA (no stamp needed) *or Popular Chess* Unit 2, The Maltings, Sawbridgeworth, Herts CM21 0PG (with a stamp).

All entries must reach either address by Wednesday May 13.

The move which gets the most votes will be entered into the game. Results and *Colossus's* response will be published in two weeks time.

Prizes

A British Museum reproduction Arran chess set will go to the person suggesting the most accepted moves at the end of the game. Five copies of *Colossus Chess 4* will go to the most consistent entrants.

Next week we return to Game Two where the Readers are playing black.

Game Two

1	Pe2-e4	Pc7-c5
2	Ng1-[illegible]	Nb8-c6
3	Pd2-d4	Pc5xd4
4	Nf3xd4	Pe7-e5
5	Nd4-b5	Pa7-a6
6	Nb5-d6	Bf8xd6
7	Qd1xd6	Qd8-[illegible]
8	Qd6-d1	Ng8-[illegible]
9	Nb1-c3	Pd7-[illegible]
10	Bc1-e3	Ke8-g8 o-o
11	Bf1-[illegible]	Bc8-d7
12	Ke1-g1 o-o	Ra8-c8
13	Qd1-d[illegible]	Nc6-d4
14	Ra1-d1	Nd4xe2+
15	N[illegible]	Rc8-c[illegible]
16	Be2-[illegible]	[illegible]
17		

Atari plans research facility in Europe



The Mega ST – part of Tramiel's push into specialist technology

ATARI chairman Jack Tramiel has plans to set up a software centre in the UK later this year.

This is expected to be an advanced software development unit along the lines of Sinclair Research's Metalab set up in 1984 to research into hardware technology.

Tramiel is believed to be in negotiation with programming teams to staff the unit. Apparently the decision has been taken to place the software centre in the UK due to the programming expertise in this country. While in the UK for the recent Atari show, he is reported to have said "I can smell the success here".

While it is thought that the research centre will be looking at RISC (Reduced Instruction Set Chip) technology, no details have been released yet.

Atari is also considering setting up a research and development centre in West Germany which will concentrate more on hardware innovations, and a computer manufacturing plant in North America. The Atari range of micros is currently manufactured in Taiwan.

Jack Tramiel: "I can smell the success"

Digital Research moves away from mass market

DIGITAL Research is to move away from the mainstream operating system market and will be concentrating on vertical markets and multi-user applications, particularly with its Concurrent DOS 286 system.

However, DR's UK vice president Paul Bailey said that this move would make no difference to work on Gem, the DR operating system packaged with the Atari ST and Amstrad PC1512 machines among others.

"We have three main markets," he said. "Multi-user micros, specialist industrial automation and graphics systems on DOS. We are totally committed to all three, although the main focus is on the multi-user markets.

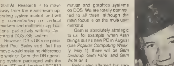
"Gem is absolutely strategic to us; for example, when Atari brings out its new PC in August (see *Popular Computing Weekly* May 1) there will be *Gem Desktop*, *Gem Paint* and *Gem Write* on it."

Bailey also affirmed his support for Amstrad, should Amstrad bring out further versions of its PC compatibles later this year as expected.

Correction

LAST week, we printed a picture on page 18 which we claimed was John Speller of Micropro.

In fact, this was a dastardly lie since it was Ray Evitts of Origin/Microprose. The real John Speller is pictured below.



Amiga 500 on show to over 18s only

● Commodore has confirmed that it will launch the Amiga 500 to the public at the Commodore show starting on June 12.

However, the machine will be displayed in the Commodore Business and Amiga Expo suite, which is only open to those over 18 years old.

The suite is an area which will specialise in new Amiga products for serious home and business use.

Camel Eprom blower now from Alphacam

CAMEL Products' Eprom blower Bloprom RS is now available from Alphacam.

Bloprom RS connects to any micro with an RS232 with RTS/DTR and CTS handshake lines.

Bloprom RS costs £189.95 from Alphacam and is available for the IBM PC, BBC, QL and Spectrum micros. The price includes a cable and disc (microdrive for QLs).

Details from Alphacam at The Old Maltings, 135(9) Ditton Walk, Cambridge CB5 3QD. 0223 214214.

New micros for Flash Gordon

MASTERTRONIC is converting its Commodore 64 hit *Flash Gordon* to the Spectrum, Amstrad CPC, MSX and Atari 8-bit machines. The program will be available in June at Mastertronic's MAD range price of £2.99.

Activision and Codemasters in Grand Prix row

A ROW is brewing between budget newcomers Codemasters and American owned Activision over a recent Codemasters release *Grand Prix Simulator*.

It is alleged similarities between that and the coin op *Super Sprint* licensed by Activision which is causing the argument.

Events started with Activision contacting Codemasters alleging that *Grand Prix Simulator* – already a best selling title on the CPC – infringes its copyright and stating that unless the game was withdrawn from the market a High Court injunction would be sought and damages claimed against projected loss of revenue.

Codemasters strongly denies the allegation and so far has refused to comply with Activision's demands.

Said Codemasters's David Darling: "They're both overhead racing games but within that restriction no specific points are the same. I'm confident that if I got to court we'd win."

To date both companies have put the matter into the hands of their respective lawyers and the dispute remains unresolved.

The battle could prove something of a test case. Previous disputes over licensing copyright have usually concentrated on specific sprite design and screen layout – certainly not the case between *GPS* and *Super Sprint*. If Activision wins on the premise that the general game concept is part of the licence the implications are enormous.

At the time of going to press representatives from Activision were unavailable for comment.

New report cites harm from VDU exposure

THE most detailed report so far into the effects of VDUs on users was issued last week and concludes that VDUs are harmful.

The report was commissioned by the council workers union NALGO and published by the VDU Workers Rights Campaign. It examined the effects of VDU use on 3,000 employees of the London Borough of Newham and found some startling conclusions.

Most reports of this nature have proved inconclusive. However in the NALGO report more than three quarters of those users who were interviewed complained of blurred vision and painful eyes. Psychological and social effects such as depression were common particularly among women.

Further problems such as stress are caused by computer breakdowns and printer noise.

In other countries, for example Sweden, Norway and West Germany VDU users are protected by statutory health and safety legislation. But in the UK there is no such legislation, only employer specific agreements.

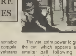
"We can't understand the reluctance to have VDUs built in to current standards. It's vitally important that they are," said campaign worker Irene Hamilton.

Hamilton wants to see all VDUs shielded against electromagnetic radiation at the point of manufacture.

"And all equipment should come with an anti glare screen and a detachable keyboard," she went on.

The report is available from the VDU Workers Rights Campaign, City Centre Project, 32–35 Featherstone Street, London EC1.

SOFTWARE HOTLINES



Distractions: quite a sensible name for a new games compilation for the PCW from veterans **Design Design** which believe it or not has been around now since early 1982.

The compilation contains conversions of three of its recent releases *NEXOR*, *On The Run* and *2112AD* which Design Design say covers all the ground between shoot em ups and problem solvers that should satisfy even the Mensa minds. Err lads, if you had a Mensa mind would you buy a PCW?

Another sensible name **Sensible Software**, whose previous efforts include *Galaxibirds* and *Parallax*.

Sensible is an Essex based programming duo consisting of Jon Hare and Chris Yates who have just written a great little game for Ocean called *Wizball* (see screen shot below) in which you play the part of a wizard and his cat. What has happened is that an evil mouse has stolen all the colours out of the eight levels of the game, a situation you must rectify.

As you might guess from the title of the game, there's quite a bit of bouncy bouncy involved as your wizard is in ball-like form for most of the time, but there's one hell of a lot of shooting as well, with an extra powers thing artistically inspired by *Nemesis* et al.

The vital extra power to get is the cat, which appears as a smaller ball following you around – but under independent control when the fire button is depressed. It's with the cat that you have to collect the drops of paint that fall to the ground when you zap certain blobs.

Out at the end of May on Commodore, Spectrum and probably Amstrad too, it's well worth a look.

But let's face it, there are times when nothing but a bit of gratuitous violence will do, so why not load up *Prohibition* from **Infogrames**.

On ST now with 8-bit versions following, you are faced with the front of a building around which you smoothly scroll blowing away gangsters that appear at windows, under drain covers etc. Failure to do this within a strict time limit will result in your own demise. Good stuff.

Hey! Licensing deal of the year, the kids will love it, hot cakes will not hold a candle to the sales and it could be the saving of the whole of Argus Press Software – from **Quicksilva**, *The Tube*.

But wait. No Paula. No Jools. It's a shooter. Still if only they can get Tyne Tees to ban it, who knows ...?

John Cook

DIARY DATES

MAY

8–10 May
The Electron & BBC Micro User Show
New Horticultural Hall London
Details Software hardware and peripherals for Acorn s micros
Price £3 adult £2 children £1 discount for advance booking
Organiser Database Exhibitions
061-456 8835

JUNE

12–14 June
Commodore Show
Novotel Hammersmith
Details First public showing of A500 and A2000 Amigas
Price £3 adult £2 children
Organiser Database Exhibitions
061-456 2991

30 June–2 July
PC User Show
Olympia London
Details Hardware and software for all users of IBM PCs and compatibles
Price £5
Organiser EMAP International Exhibitions
01-608 1161

JULY

10–12 July
Amstrad Computer Show
Alexandra Palace Pavilion London
Details. Displays and demonstrations of all latest hardware software and peripherals for Amstrad computers
Price £3 adult £2 children £1 discount for advance booking
Organiser Database Exhibitions
061-456 8835

Prices dates and venues of shows can vary and you are therefore strongly advised to check with the show organiser before attending *Popular Computing Weekly* can not accept responsibility for any alterations to show arrangements made by the organiser

Off the Hook follow-up tape to aid NSPCC

A CHARITY tape in aid of the NSPCC is to be launched this summer probably in June

The organisation behind the publication of the tape is being co ordinated by Rod Cousens of Activision as a follow up to previous ventures *SoftAid* and *Off the Hook*

The compilation is in the final stages of assembly said Cousens It will include *Xeno* by Argus Press Digital s *Night Gunner* Realtime s *Starstrike* (1) and Gremlin s *Monty on the Run* so far and there will be ten titles in all

The compilation has been put together in conjunction with the NSPCC which has donated packaging and will sell the tape in its own stores It will also be available in normal computer outlets The compilation will be available for Spectrum Commodore and Amstrad machines and full details will be available in the next couple of weeks

So far the software industry has raised more than £30 000 for the NSPCC mainly from its InDin dinner last December But Cousins says that about 10% of the money pledged by companies has still not been paid

I hope that we ll raise more than £100 000 for the NSPCC said Rod Cousens That will make it the third year running that we ve raised over £100 000 for charity after SoftAid and Off the Hook

IIGS word processor out in UK

MGA Microsystems is selling *Graphicwriter* for the Apple IIGS from Californian company Datapak

Graphicwriter is a page layout program incorporating word processing and drawing functions all mouse controlled Graphics can also be ported over from other programs such as *Paintworks Plus*

Graphicwriter costs £149 45 inclusive Details from MGA Microsystems 140 High Street Tenterden Kent TN30 6HT 05806 4276

Audiogenic needs programmers

AUDIOGENIC admitting that it is no longer in the top ten of software companies is starting a recruitment drive for programmers

The company is offering an Amiga 500 for any programmer it takes on whose program then makes the top ten in the Gallup software charts An Amiga 2000 goes to any programmer whose product makes it to number one

Audiogenic can be contacted at 12 Chiltern Enterprise Centre Station Road Theale Berkshire 0734 303663

Silent Service banned in West Germany

THE simulation game *Silent Service* by Microprose has been banned from open sale in West Germany

the ban comes under the Youth Dangerous Publications List legislation apparently *Silent Service* which simulates a World War II submarine operation is to realistic

The decision means that the game has been relegated to regulated outlets such as sex shops

Microprose s president Bill Stealey plans to appeal against the ban

■ Microprose has moved into the hardware market with the announcement of a second joint venture agreement with a US company

Following last month s deal with Origin Microprose has signed up with Suncom to distribute its range of joysticks and peripherals including monitors and accessories such as disc storage cases and printer stands

Major Bill Stealey of Microprose with some of the company's 'controversial' products


TECHNOLOGY SO ADVANCED ...
... IT'S AFFORDABLE
ONLY FROM SILICA
FREE STARTER KIT - Only From Silica
DEDICATED SERVICING - Only From Silica
THE FULL STOCK RANGE - Only From Silica
AFTER SALES SUPPORT - Only From Silica
FREE CATALOGUES - Only From Silica
FREE OVERNIGHT DELIVERY - From Silica
PRICE MATCH - Only From Silica
SIDCUP (& Mail Order) 01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
LONDON 01-580 4839
Lion House (1st floor) 227 Tottenham Court Rd, London, W1
LONDON
Selfridges, 1st floor, Oxford Street, London, W1A 1AB
520ST-M
£259
520ST-FM
£399
1040ST-F
£599
ATARI
ST
To: Silica Shop Ltd, Dept PCWK 0687, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
PLEASE SEND ME FREE LITERATURE ON THE ATARI ST
Mr/Mrs/Ms: Initials: Surname:
Address:
Postcode:

NEXT WEEK

Load It

Help is at hand for all users of Commodore's C2N datasette recorder. Load It claims to solve alignment problems once and for all. Chris Jenkins checks it out.

Spectrum keyboards

Anthony Reid takes you through a DIY project to build your own Spectrum keyboard. If you're still suffering with the rubber keys, or down on your hands and knees picking up loose keys from the Spectrum Plus, this could be the article for you

Software

***Everything You Ever Wanted to Know about Graphics on the Universe and Everything on the 8256.* Er — that's a product title! We find out just how comprehensive it is. Plus *Maxam II* by Arnor, an assembler and monitor for Amstrad CP/M Plus**

Amstrad DMP4000

Tony Kendle tests Amstrad's latest printer, promoted for the PC1512 range, but compatible with any micro with a standard parallel printer output.

Programming in C

Kenn Garroch continues his series on programming in C, taking you further into programming techniques

Z88 DELAYS CONTINUE

SIR Clive Sinclair's Z88 portable machine is suffering further delays and first orders are not now expected to be delivered until mid May. However Sir Clive is already talking to retailers about the possibility of stocking the Z88 in the summer.

He puts the delays down to merging the software suites together as a whole. "It's still not complete – we've got the chunks now they need to be merged into one."

Sir Clive would not reveal how many orders had been placed for the Z88 so far but he did add that he was setting up a second production line for the machine in addition to Thorn Datatech.

"The deal hasn't been signed yet so I can't name names at the moment but the second line will be there," he said.

The Z88 – still not delivered



Mastertronic drops Melbourne's Gadget

FOLLOWING the move last week of the majority of the Melbourne House staff to the Mastertronic Paul St offices came an announcement confirming the fate of the Melbourne House game *Inspector Gadget and the Circus of Fear*.

Inspector Gadget, which had reached an advanced stage of production with review copies already sent out to the press has been withdrawn.

According to Mastertronic's Frank Herman the reasons behind the decision were simple.

"It wasn't as good as the average Mastertronic game so we couldn't justify asking full price for it," he stated.

Programmed by Australian software house Beam Software – author of much of the Melbourne House output – Gadget was an arcade game based on a French Clouseau-like cartoon character and according to Herman Beam has accepted the decision as fair.

The software industry has not seen the last of Gadget however, as the licence has been maintained and another game based on the character will be written by Beam with release around the time of the *PCW Show*.

Herman continued: "We're committed to producing super software from Melbourne House," adding somewhat bullishly, "it would have to be super to be as good as Mastertronic."

● The first two arcade machines from Arcadia, the new Mastertronic financed coin op designers, have almost been completed – including a product under the name of *Rockford*. See next week's Hotlines for details.

Locoscript II now due in mid-May

THE imminent release from Locomotive Software of *Locoscript II*, the long awaited upgrade to the word processing software bundled with the Amstrad PCW machines (see *Popular Computing Weekly* April 17) is now scheduled for mid May with the first copies going out around May 12.

According to Locomotive, all those who have already ordered the program will have been informed by letter of the probable despatch date and it was emphasised that no cheques would be cashed until that time.

RPGs in new TV series

ANGLIA TV is to transmit a networked series on role playing games in September. The series will take the form of an actual game, *Knight Mare*, being played on air.

Although it will be screened during the late afternoon Anglia hopes it will attract a number of adult viewers.

Computer game rights to *Knight Mare* are expected to be announced within the next week or so.

Electronic Arts gets Batteries

ELECTRONIC Arts has acquired Batteries Included, the Canadian software house best known for its *Paperclip* word processing package.

The deal should make Batteries products more readily available in this country. Electronic Arts recently set up its own office in the UK (see *Popular Computing Weekly* March 27).

CRIME AGAINST COMPUTERS

Computer crime is not an area that most people take seriously. But quite a lot of damage can be done by computer criminals and, as John Brissenden reports, the trend is growing

They call it white collar crime. A lot of people don't take it seriously until it happens to them. But the problem is growing all the time.

It used to be a blanket term for company fraud but is now most closely linked with computer crime – fraud, theft, arson, sabotage, forgery or other misuse with or of computer systems.

The effects of computers are growing in all directions. There are more systems in use. Computers are handling more information. They are becoming more powerful and complicated. And more people are using computer systems.

So a major net result of all these factors is the growth of computer-related crime.

The area where most computer systems are used is within companies' business systems. So it is here that most computer crimes are committed. Some are plain fraud committed for financial reward.

But others are more concerned with the computer system itself and causing damage to it. This could be sabotage or malicious damage by someone outside the company or by an insider. This could take the form of physical attack, eg arson, or more often gaining access to restricted information or even tampering with programs so as to cause vast and untraceable internal damage to the system – hacking. A third major area is software theft or piracy.

Computer related crimes are hard to define, hard to quantify and even harder to spot. Why?

Detective Inspector John Austen is in charge of the computer crime unit at Scotland Yard. His team is part of the company fraud department of the fraud squad and it's their job to deal with a whole range of computer related offences.

"It's the kind of crime that has a high public profile. It makes good news copy and it's good box-office news as well – the young whizz kid who gets caught fiddling millions of dollars out of a company or the teenager who accidentally starts World War III on his micro.

"But although the reality is sometimes nearly that spectacular, most of the time it may be mundane or even unknown.

"It could be the case whereby a fraud has been committed, sometimes for large amounts of money, and it just so happens that a computer system is the vehicle that just processes through the information," says Austen.

"We've had several instances where somebody's stealing money from a local

> **"It's the kind of crime that has a high public profile. It makes good news copy, and it's good box-office news as well"**

Detective Inspector John Austen: in charge of computer crime, Scotland Yard

government authority and th[illegible] department of the authority that [illegible] salaries and wages and th[illegible] the form. Spurious form, spur[illegible] spurious personnel and they'll [illegible] in. Now it's open to interpreta[illegible] whether that is a computer crime or not."

Another problem is that if a company discovers that an employee has been carrying out a fraud or other crime through the computer system, they are often reluctant to report the fact to anyone, including the police.

Some industry watchdog bodies, such as the Federation Against Software Theft, have put out estimates. FAST reckons that software theft or piracy alone is costing the industry £150 million a year. But Austen agrees that certain factors make it virtually impossible to gauge the size of the problem.

"How long is a piece of string? I think it's fair to say that there is a certain reluctance to report crime that's computer related, more than say a person being mugged in the street or having their home broken into, because there are different considerations from the point of the victim – a certain amount of gullibility or embarrassment which can reflect itself back on the victim, whether it be a company or a person.

"So I think that that's a fair estimation of perhaps why there is some reluctance. Although it's no good asking for hard evidence of it.

"One thing that I try to warn people about a little – I think that there are people who work in computing who are addicted to it, in the sense of they just won't leave the damn things alone.

"They'll play chess in their lunchtime, they'll go home, they sit and play *Space Invaders* all evening. There is a danger from people like that because they hit a ceiling of boredom.

"This is the dilemma – if you want the brightest of bright young whizz kids, he more than likely will be hooked upon his subject. But there are dangers in people who get hooked upon computing."

Do they consider the possibility of being detected?

"I don't think they do. If there is one thing that's rather unique about people who commit computer crime, it's that they tend

continued on page 14 ▶

SPECIAL FEATURE

◀ continued from page 13

"The area where most computer systems are used is within companies' business systems, so it is here that most computer crimes are committed"

their first offences. But that does tend to be rather unique with this sort of crime.

So how can the police attempt to combat computer crimes? Do the police Crime Prevention Departments have a role?

They have given advice to companies but the sort of crime prevention area that they cover is slightly different to ours. Whereas they will cover the physical side of securing policies, controls, etc, we tend to look and talk more about the logical and procedural side.

It's talking about access levels, password controls, data processing procedures, encryption, what encryption to use if it's necessary, supervision of personnel.

And I believe in sayin' and doin'. What I mean is that if I make a point, for instance about the use of passwords, we are in a position to give an example perhaps of an instance where that has led to problems.

So it's all very well and good people talking about 'One should do this, one should do that', but if you can show people by example, although not named example obviously, of the sort of things that have occurred, it brings it home to them.

Even if you had a large establishment where you have a computer operator who's separate from a computer programmer, in my experience you often find that the operator is studying at night school to be a programmer anyway. And the programmer is studying at night school to be a systems analyst, and the analyst is studying to be a DP manager.

So one never takes it for granted that because somebody is a mere data entry clerk that they don't know how to load a disc onto a machine, because they probably do.

I decided four years ago that if we were going to provide the public with a service in this police force that was going to give them specialist expertise in this field, that it would be necessary to put ourselves on something of a public platform, by going out and talking to people in the industry.

We needed to make them aware of what we saw as the dangers and risks, the sort of things to look for, to make them aware of the losses that can be sustained from a determined attack on a computer system, and at the same time to let them know that we are here not only to investigate crime, which is our primary role, but also to offer advice.

And judging by my postbag and the telephone calls that we get, the latter has overtaken the former.

The area of computer crime that has had most coverage recently is hacking, the unauthorised access to data. Austen uses this as an example of how the unit secures convictions in this very difficult area. But is hacking as much of a danger as some people believe?

I think that it's probably more hype. The hype that's generated tends to encourage people to try and do things that they can't do.

Your normal teenager who's got a BBC micro and plays games on it, as quite a few of our youngsters do, gets bored with that and then they buy a modem and suddenly they're interested in public exchange networks and probably think they have more capability than they do.

I mean there's a lot of hype been generated about so called secure systems like banking systems.

Now whatever technology is produced and whatever enhancement one can put to a micro it is not possible with your BBC to start hacking into Bloggs' Bank – you can't do it.

The Forgery and Counterfeiting Act of 1981 caters for the making of false instruments with the intention of deceit, whether it be manual or electronic. And that's the Act upon which we prosecute hackers.

Now what I mean by that is let's say you and I work for the same company. You have got access to our coded payroll. I haven't got access to the payroll but I know what your password number is. Or I do a combination of things to try and get your password.

Immediately I attempt to do that I commit forgery of the database.

Now this is particularly pertinent today to these ATM machines, these cash dispensers. A lot of people are under a misapprehension here. If I find a card in the street, if I don't know what the number is there's no way that I'm going to find out what the number is. But let's just say I'm tempted to stick that card into a machine and as I don't know, I'll tap in one, two, three, four.

What people may not realise is that by doing that, putting in one, two, three, four, they are attempting to forge an instrument.

Finally, how does Austen think that people, including the police, can arm themselves against fraud or damage through their computer products or systems?

It's knowing what to look for: there's a certain amount of knowledge obviously that has to be gained on part of the investigator to know what one is going to go for.

I instigated a course at the National Police College specifically to train officers from other forces. The purpose of that's so that each police force in this country will have at least one officer who is computer literate.

All we're doing is taking experienced detectives and we're topping them up with some computer knowledge sufficient, one hopes, to be able to deal with the evidential requirements of computer related crime.

Bearing in mind that some people spend their whole life in the industry and still don't know it all, there's no such thing as a computer whizz kid, they do not exist.



Austen: 'We are here not only to investigate crime, but also to offer advice'

DESKTOP PUBLISHING
WITH PUBLISHING PARTNER™ ON THE ATARI ST

ATARI
ST SOFTWARE

1 WHAT IS DESKTOP PUBLISHING?
Desktop Publishing is a method by which documents can be produced using a computer software and a printer. These documents are near professional appearance and cost only a fraction of the price which you might otherwise pay to a designer, artwork studio and printer. Because the middle man are eliminated from the production process, desktop publishing allows the user to retain total control over his or her documents, making last minute updates without panic and without incurring extra charges for rush work.

2 WHAT CAN I USE IT FOR?
As we all make use of the printed word in one way or another in our daily lives, the applications for Desktop Publishing are all around us. If you belong to a club or society or if you run your own business, the possibilities are endless! Our list of example applications will give you some other ideas.

Advertisements	Distribution Leaflets	Offered Transparencies
Application Forms	Fayre Programmes	Personal Cards
Brochures	Invitation Cards	Personal Letterheads
Business Contracts	Invoices	Presentations
Charts & Tables	Labels	Price Lists
Club Certificates	Menus	Special Offer Leaflets
Club Newsletters	Office Forms	Technical Sheets
Dance Tickets	Order Forms	Work Estimates

3 PUBLISHING PARTNER
Publishing Partner from SoftLogik Corp™ includes all of the features which you would expect in a good Desktop Publishing package. It combines word processing, page layout and graphics facilities all in one program, allowing you to create stunning documents on your Atari ST. First you can do a rough page design and start adding blocks of copy. See how it fits. See how it looks. See how it flows onto the next page. Make some changes. Try a different type style, or a different size, or some borders, some shapes, or even some pictures. Because Publishing Partner incorporates WYSIWYG (What You See Is What You Get), you'll see instantly if your new idea works or not. The computer's screen will show you just how the page will look when it prints - no more guesswork. You can adjust fonts, character sizes and even character spacing, anytime and anywhere on the page. Watch an ordinary letter transform into a professional looking piece right before your eyes as you experiment with mixing graphics and text. And when you want to see a hard copy of your masterpiece, just send it to any one of the printers which the program supports (the list is growing all the time).

SoftLogik Corp™

SoftLogik Corp™ was set up in the USA by Shawn Fogle and Deron Kazmaier to produce quality desktop publishing software with uncompromising power and features. Publishing Partner was developed after 1½ years of research, working with typesetters and printers and the results achieved are outstanding.

4 SIMPLE, POWERFUL, AFFORDABLE
Printing and publishing is a fairly complex business which takes years of training and experience to master. You wouldn't think so with Publishing Partner, which takes full advantage of the ST's user friendly GEM environment. It is so user friendly and easy to understand, most people find they can produce their first document without even opening the fully comprehensive 158 page manual which accompanies the program. Using the mouse to manipulate the self explanatory pull down menus and windows, you can be up and running in no time, creating a variety of documents quickly and easily. In addition, the flexibility of Publishing Partner allows you to choose between mouse or keyboard operation, whichever suits your personal preference. Although simple to use, Publishing Partner is by no means a simple program. Quite the contrary. Behind the user friendliness of GEM lies a most complex and powerful publishing tool. The combination of Publishing Partner and Atari's powerful low cost ST computers has brought an affordable alternative to the desktop publishing systems currently available from Atari's competitors.

5 THOUSANDS OF TYPE STYLES
This is no exaggeration. Unlike most other desktop publishing software packages which offer you 2 or 3 different fonts, Publishing Partner gives you true flexibility of over 4,000 type styles per font. Publishing Partner offers you 14 variations of each font:

BACKSLANT	MIRROR	STRIKE THROUGH
BOLD	OUTLINE	TALL
DOUBLE U/L	REVERSED	UNDERLINE
ITALICS	SHADOW	UPSIDE DOWN
LIGHT		WIDE

And you can mix and match any number and combination of styles to your own requirements. The total number of possible permutations is over 4,000. And that's not all, each style can be used in any one of 216 sizes in one point increments (from 1 point to 216 points)! All this is achievable on an unexpanded 520ST with just 512K RAM! Other competing packages require 1024K RAM just to get the larger sizes above 72 point and still can't match all of the variations available.

Publishing Partner is a trade mark of SoftLogik Corp™

6 WORD PROCESSING
Publishing Partner contains the power and features that you would expect to find on a dedicated word processing package. In addition it includes facilities which a professional typesetting machine would offer. For example the program can cope with 216 different type sizes, with over 4,000 style variations of each one. The following are some of the facilities you will find within the capabilities of Publishing Partner:

* Adjust margins for any column
* Change block to uppercase or lowercase
* Change margin indents
* Character spacing from -128 to +127
* Copy text to and from the buffer
* GEM based
* Import and export files
* Insert and delete pages
* Justifies right/left/centred as you type
* Justifies to the character/word
* Kerning from -128 to +127
* Line spacing/leading in ¼ points from -64 to +67
* Link columns together
* Macros
* Manual Hyphenation
* Merge files together
* Optional grid & ruler display
* Over 4,000 type style variations of each font
* Page numbering
* Pica, Inches or Centimetre measuring system
* Print to paper vertically or horizontally
* Read & merge any ASCII file
* Search and replace
* Tabs for charts/tables
* Unlimited headers & footers
* User definable page size
* User variable superscript/subscript characters

7 PAGE LAYOUT
Whatever you require, custom logos, unique borders, unusual letterheads etc, Publishing Partner is your solution. After all, it was specially designed by professionals who realise that there's more to your computer than just typing letters.

* Accurate to 3 decimal places
* Adjust character size from 1 to 216 points
* Auto text flow between columns
* Change columns on finished page
* Display 15%-1500% of original size
* Display actual size
* Display multiple pages/rulers/text routing
* Layout multiple columns
* Print to disk
* Set auto text routing
* Snap to guides
* Superimpose text on text or tint on text

SEEING IS BELIEVING
We have a easy task you how powerful Publishing Partner is and how easy it is to use. [illegible]

8 GRAPHICS
Not only can you load any Degas, N-Vision, Neochrome or digitised pictures into your Publishing Partner files, you can also enlarge or reduce them for an exact fit. Or you can copy just a section of a picture and then paste it into your document as many times as you want. You can still go back and resize it at any time or crop it to delete unwanted areas.

* 3 types of line ends: square/rounded/pointed
* 7 types of line which are all editable
* 7 weight lines ranging from ¼pt to 8pt
* 40 fill patterns each with a border option making a total of 80 fill options
* Ability to produce separations for 2 colours
* Copy graphics to and from clipboard
* Cut, paste, copy or crop graphics
* Import graphics from third party graphic programs such as Degas, Neochrome, N-Vision or any art program that produces compatible ASCII files
* Select colours to use and print with
* Toolbox features include Circles, ellipses, boxes, rounded corner boxes, horizontal/vertical lines, diagonal lines, polygons and free hand drawing

9 OUTSTANDING OUTPUT
Publishing Partner is a unique program with a large variety of printer drivers for both laser and dot matrix printers. Dot matrix is supported in both 80 column and 132 column mode, so you could even produce a tabloid width newspaper (11" wide) on a wide body printer. Drivers are also available for the new technology 24 pin dot matrix printers which can give a fine resolution of 360×360 compared with laser printers at 300×300. The current drivers (included FREE with the program) are as follows with new ones being written on a weekly basis:

9 PIN DOT MATRIX (Various Res)
[illegible] — Mannesmann [illegible], NEC 8023, Panasonic & KXP, [illegible]

9 PIN DOT MATRIX (240×216 Res)
Citizen MSP, Epson 800/FX/EX — Mannesmann Tally MT, Star NB/SG

18 PIN DOT MATRIX (240×288 Res)
[illegible] — [illegible]

24 PIN DOT MATRIX (360×180 Res)
Citizen [illegible], Epson LQ — Epson SQ, Toshiba P321

24 PIN DOT MATRIX (360×360 Res)
NEC P6 P7 — NEC XL [illegible]

LASER PRINTERS (300×300 Res)
[illegible] Epson or H.P. Laserjet [illegible] RAM, [illegible] Apple LaserWriter, Postscript, [illegible]

OFFICIAL UK VERSION
The official UK version of Publishing Partner has a pound (£) sign as a standard part of its character set. Other versions have also been imported unofficially from the USA and have a dollar ($) sign instead of a £ sign. These versions will not be supported by the UK [illegible]. The UK version also contains [illegible]. [illegible] you buy the official UK version, not an unofficial import with incorrect characters.

£139.00
(+VAT £159.85)

Publishing Partner is available from Atari ST Dealers throughout the UK. If your local dealer does not have Publishing Partner in stock, it can be obtained by mail order. Postage & Packing is free from:

SILICA SHOP Ltd, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX Tel: 01-309 1111

INFORMATION REQUEST FORM
To: Silica Shop Ltd, Dept PCWK 0587, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

Please send me further details on: DESKTOP PUBLISHING

Mr/Mrs/Ms *Initials* *Surname*

Address

Postcode

I am interested in the Atari ST ☐
I already own an Atari ST ☐

DTP

Let your PCW do the talking

Lacking an RS232 interface, the PCW hardly seems an ideal micro for communications Peter Worlock tries out Miracle Technology's WS4000 modem, which could change all that

Computer communications has something of a suspect reputation among computer users

Enthusiasts rate it as the best thing since the computer itself The majority of users look on it as something potentially great – with a heavy emphasis on potentially

But it's easy to overlook how far things have come in a few years It isn't so long since comms meant manually operated modems all operating at 300 baud and the only thing to connect to was an enthusiastic but amateurish bulletin board

Now there are hundreds of bulletin boards all of them enthusiastic but the majority of them highly professional

There is also a host of commercial services from the ubiquitous Prestel to electronic mail facilities

And not least there has been constant development of the modems themselves Today the auto dial auto answer multi rate intelligent modem is commonplace

But some computers remain better suited to communications than others and if you had to pick one that looked like a loser in the comms stakes you'd probably tag the Amstrad PCW

For one thing it lacks an RS232 interface the primary requirement of would be communicators And the lack of colour and viewdata graphics put it behind the field for services like Prestel

Now PCW owners have been given a boost by Miracle Technology The Ipswich based modem maker has released a special version of its award winning WS4000 intelligent modem

When coupled with a good software package like Sagesoft's ChitChat (see panel) the WS4000 allows PCW communicators to hold their heads high

Features

Instead of the normal RS232 cable this version of the modem has a ribbon cable terminating in an edge connector that plugs directly into the PCW's expansion bus

This means that fitting the modem to the micro is simple and eliminates the need to buy an extra interface

Miracle Technology has established a reputation for quality in the modem market and this version of the WS4000 will do it no harm

The modem is cased in a rather startling shade of red but is well built with solid connections to the serial phone and power cables All cables go into and emerge from the rear of the unit which also features a reset switch

The modem itself is of a size and shape to comfortably accommodate a telephone on top but the ribbon cable is of precisely the right length to give you only one possible position immediately next to the right side of the monitor

Since this is where 99 per cent of PCW owners will have their printers some rearranging of the desk will be necessary

Pressing the reset switch and turning the power on and off at the mains is as much as you can do from the outside Everything else is controlled through software For this reason you'll need a decent software package to get your money's worth from the hardware

Along the front of the modem is a row of status lights These indicate power on high speed mode on line terminal ready request to send clear to send carrier detect send data receive data and auto answer mode

PRESTEL Viewdata 00 05.24I

MICRONET DEMO 565051a 0p

ADVENTURE

Play LIVE adventure games on Micronet. No more boring trolls who bite off your head in exactly the same way every time you blunder into the cave! Most characters are REAL PEOPLE pitting their wits against yours!

There's even an area with hints on how to do the infuriating bits in adventure games you've already bought.

1 SHADES (live) 2 STARNET (strategy)

3 ADVENTURE AREA

[illegible] HELP 7 HOW TO JOIN

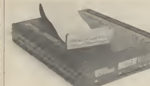
[illegible] RECREATION 9 CLUBS & HOBBIES

F1 Dis-connect F2 Print Frame F3 Start Capture F4 Capture Frame F5 Recall Frames F6 Save Text F7 Send Mail F8 Help

“Miracle Technology has established a reputation for quality in the modern market, and this version of the WS4000 will do it no harm”

The [illegible] lights may be [illegible] flicking or steady [illegible] depending on the modem's activities Once you become familiar with them you can determine at a glance the status of the modem and whether it's functioning as expected

You can watch them pushing out the number being dialled and you'll also see



Miracle Technology s WS4000 modem

the resulting tone ringing engaged or unavailable blinking once dialling is complete

The modem itself is fully programmable either through your own programs or through suitable software For example you can set the time the modem will ring a number before it gives up how long it will wait after answering for a carrier signal how long after a carrier is lost before the modem hangs up (useful for overcoming temporary signal losses) whether the modem should re try an engaged number and so on

The WS4000 is a multi rate modem The model under review supports full 300 and 1200/75 protocols and 1200 1200 half duplex

In auto answer mode you can set the number of rings required before the modem answers and there are very powerful automatic search commands For example you can set the modem so that it will try and determine the speed of the incoming transmission match to it and complete the connection

The accompanying documentation is thorough and clearly written with a host of practical examples In addition to the role of user information there is a section for potential software authors containing more detailed technical specs

Conclusions

The WS4000 was named peripheral of the year in last years British Micro Awards and was a deserving winner

There are cheaper modems around but few match the WS4000 for features and almost all of them require the purchase of an RS232 interface as well

Amstrad PCW owners looking for a high quality modem at a reasonable price should put it high on their list of potential buys

Product *WS4000 V2123 modem* **Price** £195 50 **Supplier** Miracle Technology St Peter s Street Ipswich IP1 1XB

```
PRESTEL                    Viewdata                  00:10 38E
MICRONET DEMO                             5650321a         0p
                        AMSTRAD
                      M I C R O B A S E
Information about every Amstrad machine
at your fingertips - an 'electronic
magazine' in your home. News, hardware
and software reviews, hints and advice:
updated DAILY! FREE telesoftware,
available 24 hours a day.
 1 Samples   2 Amster's Cage   3 Amsnet
   8 Microbases                       0 HELP
   7 Join Micronet                    9 Browse
F1 Dis-   F2 Print  F3 Start  F4 Capture  F5 Recall  F6 Save  F7 Send  F8 Help
connect   Frame     Capture   Frame       Frames     Text     Mail
```

Comms software: ChitChat

Although buying a full featured software package is not an absolute essential for using the WS4000 it is recommended

For some uses - some bulletin boards and electronic mail facilities – the Mail232 program that comes free with your PCW system software is adequate

However if that is the limit of your ambition you're probably buying too much power in the WS4000

Accessing viewdata

To access viewdata services such as Prestel Micronet and many amateur bulletin boards like the amazing MicroGnome you will need a viewdata comms program

For the purposes of this review we borrowed a copy of Sagesoft s *ChitChat* Combo package and it turned out to be an admirable partner for the modem

The *Combo* version includes both viewdata and Email facilities (they are available as separate packages) and is powerful enough to take advantage of the WS4000 s features

Directories

You can create your own directory of phone numbers together with all necessary protocol details log ons passwords etc and simply tell the software and modem to get you on line

You can also create executable files to control the more powerful features of the modem

The documentation is more than adequate especially since *ChitChat* is primarily controlled through the pre programmed function keys which are permanently displayed on screen This coupled with on screen help facilities make the manual almost redundant once you are familiar with the features

Prestel and Micronet

The viewdata mode is a revelation I was dubious about the prospects for the highly colourful Prestel and Micronet screens on a green screen monitor with a customised viewdata character set But all of the screens were perfectly legible

All in all the software performed flawlessly The combination of *ChitChat* and the WS4000 make for a perfect comms system for all applications

Program *ChitChat Combo* **Price** £100 05 **Supplier** Sagesoft, NE1 House, Regent Centre Gosforth, Newcastle Upon Tyne NE3 3DS

Precision sets new records with Superbase Personal

Precision Software, best known for its Commodore 64 word processing and database programs has turned its attention to the 16-bit machines with Superbase Personal Christina Erskine finds it combines power with ease of use

Precision Software is probably best known for its *Superbase* and *Superscript* database and word processing packages for the Commodore 64 Therefore it would be a logical assumption to see *Superbase Personal* for the Atari ST as simply a conversion of the C64 product Logical but according to Precision's managing director John Tranmar completely incorrect

Tranmer and he should know his brother Simon wrote both programs says that *Superbase Personal* has been written entirely from scratch The name Superbase being duplicated only to give the product a familiar identity with potential buyers

Superbase Personal runs under Gem (a Gem based version is also available for PC compatibles) and uses all the familiar drop down menus etc running in medium and high resolution modes only

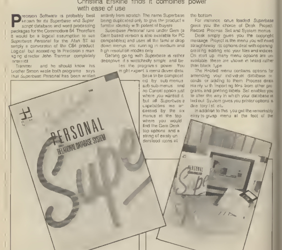
Getting going with *Superbase* is rather deceptive it's wretchedly simple and belies the program's power You might expect a menu driven database to be complicated by sub menus sub sub-menus and no Cancel option just where you wanted it but all *Superbase's* capabilities are accessed by the six menus at the top where you would find the Gem Desktop options and a string of easily understood icons at the bottom

For instance once loaded *Superbase* gives you the choice of Desk Project Record Process Set and System menus

Desk simply gives you the copyright message Project is the menu you will need straightaway its options deal with opening creating editing etc your files and indices On start up many menu options are unavailable these are shown in tinted rather than black type

The Record menu contains options for amending your individual database records or adding to them Process deals mainly with importing files from other programs and printing labels Set enables you to alter the way in which your database is laid out System gives you printer options a directory list etc

In addition to this you get the remarkably easy to grasp menu at the foot of the



[illegible] wing and [illegible] The menu comprises [illegible] g resem [illegible] tape recorder [illegible] record in the file [illegible] previous [illegible] is a fast forward – display all following files <<< a rewind – display all previous There are also pause and stop buttons

The ? icon allows you to search for a particular file by typing one value from the field in the record you need and the program will bring the required record up on screen However the key symbol for manipulating your databases is contained in the equals sign

This is the filter option which enables you to view use or print out your data according to a set of parameters which you determine You select which of your fields you want to manipulate and then how you wish them manipulated The symbols as shown in the screen picture are mainly self explanatory the same as greater than greater than or equal to lesser than lesser than or equal to

LIKE applies to text strings – to [illegible] you set the parameters them [illegible] ing in the information in the [illegible] for example Lastname LIKE [illegible] you all surnames on file [illegible] beginning with – B C or D

[illegible] files and records templates is [illegible] The number of fields is [illegible] the restriction of 255 characters [illegible] field enough surely for most people [illegible] lots can be entered in a number [illegible] ording to how you wish it presented on screen similarly with dates

One of [illegible] most attractive features is its ability to port over files from other products For text these must be Ascii format More exciting however is Superbase's ability to incorporate pictures from graphics programs – so long as they run under Gem

The most obvious uses for this are plans charts or pictoral representations of statistics which you may want to incorporate in standard letters

Conclusions

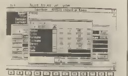
While I have talked about ease of use it is worth noting that the *Superbase* manual (which is clear and thorough with plenty of tutorial sections) does not attempt to explain databases it assumes you know the terminology and how databases work

This article by no mean exhausts the program's options and capabilities but attempts to give an overview of how it works and salient features

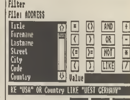
I found it versatile and comprehensive and incredibly easy to get into Obviously this is due in part of Gem and the simplicity of mouse control but all credit to Precision for not complicating the matter

If you feel you could do with a database program for your Amiga PC or compatible (with Gem) or Atari ST *Superbase Personal* is worth close investigation

Program *Superbase Personal* **Micros** Atari ST Commodore Amiga IBM PC/compatible with Gem operating system eg the Amstrad PC1512 **Price** PCs and ST £99 95 Amiga £149 95 **Supplier** Precision Software 6 Park Terrace Worcester Park Surrey KT4 7JZ



Screens from *Superbase Personal* Above note the 'tape recorder' style bottom menu for viewing your records Right the filter screen enables you to sort records according to a large number of criteria



Guide to databases

A database is basically a computerised filing cabinet used for storing records In databases of any power whatsoever this information can be indexed or sorted according to the various headings you've used within each record You could for instance list all your friends living abroad all customers still owing money after a year et

Many databases have an integrated mail merge or label printer within the package You can then print address labels of all or some people on your database according to the index you have made

File Collection of records running under the database program

Records Similar to each file or sheet in a filing cabinet

Fields This is the name given to the headings within each record For example in a simple address book database your fields might comprise first name last name address (sub divided into say street town district country and post code) telephone number etc

Relational database A database which allows you to sort your records according to multiple factors For example print out all records showing people whose surnames begin with F living in Yorkshire have 2 4 children plan to take a holiday in Spain within twelve months and don't own a dog

Having the ability to print out all records with people whose surnames begin with F is not enough to quality as relational *Superbase* is a good example of relational database

Integrated database A database program which can use and incorporate information from other programs usually the database will be part of a suite of programs in one package – and whose files can be incorporated in the other programs in the suite

Mail merge Printing standard letters labels or forms where only the name and address for example need be changed from sheet to sheet You specify whose name is to go in the gaps and each letter addressed to each individual is printed out

PEEK & POKE



with Kenn Garroch

The Sord connection

Al Straker of Willesden London NW1? writes

Q **I've just bought a Sord colour monitor (second hand) which I'd like to use instead of a TV, with my Spectrum and QL.**

I have now discovered that there is a different plug on the back of the monitor to my composite video phono (Opus disc) plug on the Spectrum and certainly the QL. I realise that the Opus output is monochrome and have made the well known 'tap from the modulator' modification as well. This appears as a phone socket at the side of the Spectrum.

As I got the monitor cheap, I was too thrilled to check it out. I'm not sure what type of signal the monitor expects.

I enclose a diagram of the plug which appears at the back of the monitor. The model number of the monitor is OUP-14C.

I hope that you can help me with this problem by supplying a pin for pin diagram or something that I can make into a converter lead if that is what is needed. I'd really like to find some way of making both computers work with this monitor, but any help on either would be appreciated.

I might be able to afford the Adapt RGB Spectrum interface if necessary — will you comment on this, or suggest some other alternative?

A I don't know what the connections are for this monitor. However there is a way of finding out by educated guesses. If the monitor is RGB then there will be Red Green Blue Sync and Ground connections. If it is composite video there is just composite input and ground. It may of course have both since there are enough connections available.

The way to find out is to take the composite output from the Spectrum and split it into its two component wires video and ground. If you connect the ground to the casing of the socket with any luck this will be ground. Next poke the video output from the Spectrum into each of the holes in turn.

If you get a red green or blue screen on the monitor then you have found the R G or B inputs respectively. If you get a picture then you will have a composite input. Once you have this poke the ground wire briefly into each of the other holes to find the ground input. The picture should stabilise when you get the correct combination.

By the looks of the socket it is more likely to be RGB than composite so having found the R G AND B inputs you need to find sync. This can be done by connecting the QL's RGB lines to the appropriate holes and then poking around with the sync line to get a stable picture. If it is RGB only then the Adapt interface will be needed to get the Spectrum to work.

Make sure that any test connections you make are only brief the voltages used are small and it is unlikely any damage can result if you are careful.

If all else fails someone will hopefully write in and tell me what the connections really are so that I can print them.

4 3 2 1
8 7 6 5

Sord colour monitor OUP 14C socket

Baffled by the BBC bytes

Don Henleys of Chippenham in Wilts writes

Q **I have a Master 128 with one 3½ inch disc drive, a KX1080 printer and a VDU. In the March 27 issue of Popular, you published three programs for the BBC. I have just entered the sideways print utility. Having just spent the last hour double, treble, and quadruply checking my typing, could you please clarify a couple of points of interest to me:**

1) Why does the program stop at line 80 with 'Byte at line 80'?

2) On re-entering the line at 80 with LDA #&CF (not &CFD), it then prints a solid line down the left hand side of the screen and stops.

I'm baffled.

One other point which you might be able to help me with is this: if I deliberately omit the semi colon in line 150 between the zero and the ? so that the line reads ?&200=0?&201=&A, the program stops with no error code, merely the message 'at line 150'. Why the machine prints at line 160 with no error code is a new mystery to me. I find that the Master does this reasonably regularly and wondered if you could offer an explanation.

A This is not really my department but just this once I'll help out. Your problem is mainly due to the fact that the listing is wrong. You can make it work by changing line 100 to DEV BPL 102 e drop the PLA etc

These commands need to be placed further down since V is corrupted by the &FFEE calls. Change line 130 to PLA TAV INV BPL loop out JMP &FFE7

Line 80 reads LDX #7 LDA &CF0 V 1p3 which will only give you the byte error. If you put a # before the &CFO V This is because it is impossible to put a value larger that 255 (&FF) in the accumulator (A)

The program works by using the *LINE command to store the string you want to print at the location pointed to by Y*256+X. So using indirect addressing [LDA(&FE) Y] each character in the string can be read

The definition for each character is then obtained with the OSWORD (&FFF1) 10 command and stored at &CFO onwards. The character number for the call is placed at &CEF ie at the start of the definition buffer

The next section of code turns each character on its side by shifting each bit of a row into a column of the definition of character number 255. Character 255 is then printed followed by a down and a left to reposition for the next one

The use of character 255 is why you got a line down the side of the screen (Char 255 is a solid block). As it stood the program was not converting the definition properly. The *LINE command uses the vector &200 &201 to point to the service code normally bad command

Your second point concerning the at line with no error code seems to be due to the program being at fault

Usually the no error code situation only crops up when using machine code routines from within programs

If the machine code does something unexpected the Basic interpreter generally hasn't got a clue as to what has caused the error and so cannot assign an error message to the fault

For example if you run the sideways program as it is it sets up the LINE command and the ?&A00=&40 (put an RTI command in) and then GOTO 160 you'll find the no error situation occurs since the machine code is doing something rather unexpected

Incidentally if I try taking the colon out of line 150 then all I get is a syntax error at 150. This could point to a difference between the 128 and the older BBC B

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem Peek it to Kenn Garroch and every week he will Poke back as many answers as he can. The address is Peek & Poke, PCW, 12-13 Little Newport Street, London WC2H 7PP

C: why it's so good

Last week, Kenn Garroch began his series of articles on programming in C. This week putting C to work and playing games.

The easiest way to learn and understand a language is to use it and see it in action. C programs are very structured, that's to say that they are always built up in a set framework. Probably the simplest program is

```
ma[illegible]
[illegible]
prin[illegible]
```

All this does is print out the message in quotes with the *printf* function. Note that commands are always in lower case and the first line is *main()*. All programs have to have *main()* if they are to compile and run correctly. The function can theoretically be anywhere in the program but is usually placed at the start.

The next line contains a { open curly bracket. This is used to denote the start of a section or block of instructions, in this case the start of the program. The *printf* function on the next line is used to output characters to the screen starting from the next cursor position; subsequent *printf*s simply follow on the same line.

To get the program to move the cursor around the screen, formatting characters need to be used. These are included in the quotes and take the form \n or \f (newline, form feed or clear screen). \\ is used to get a single back slash since \ by itself is a null or no character.

The end of the program is denoted by the close curly bracket } which is also used to end a section of code. The following example shows how a program can be split to make it easier to understand with a function being defined separately from the main program itself.

```
[illegible]
[illegible]
i=123
printf("%d squared is %d\n", i, sqr(i));
[illegible]
sqr(n)
[illegible]
return([illegible]
[illegible]
```

Here the function *sqr* is defined separately from the main program and used in the *printf* statement. The numbers to be printed are inserted where the %d's appear in the quotes. This gives a neat way of displaying numbers and if you insert %x instead of %d the number is printed in hexadecimal. %c is used for characters.

The program also shows how variables are set up and used in C. *i* is defined to be an integer (a number from −32767 to +32768) and from here on in the main program is always an integer. All of the usual functions +−*/ etc are available for use, bearing in mind that they will be non-decimal when using integer variables. For decimal numbers the float definer is used.

Other simple data types are char for single characters, short, long and double. The last three depend very much on the compiler; on some they are not implemented, others handle them in different ways and sizes.

```
[illegible]
```

The function sqr is defined after the main program and has the argument *n* which takes on the value passed to it, ie, *sqr(10)* makes n 10 within the function. The main thing to note about n is that it is defined only within the sqr function, ie, it is local to the function. The return command tells the computer that the value n*n is to be passed back to the calling program and placed in a variable. Here it is simply printed.

So far the demonstration programs have been fairly straightforward and have performed one thing only. The sqr program can be easily modified to do something a little more complex like print out the squares of a series of numbers. Simply alter the line *i=123* to *for(i=1; i<10; i++)*

This forms a *for* loop for the following statement, in this case the following line. If more than one line needs to be repeated then enclose the set in {} to make them form a block. The *for* has three parameters following it. The first defines the start value of the counter, eg, *i* starts with the value 1. The next contains the inverse of the end condition, ie, keep looping until this is false.

The final part sets up the increment to be used at the end of each loop. This could be *i=i+1* but the C short cut for this is *i++* which means exactly the same thing. For decrementing *i−−* could be used.

There is no semicolon at the end of the *for* command since it starts a structure. All statements end in semicolons to make sure the compiler knows where one ends and the next one begins.

An alternative way of looping would be to use *while*. To make the program use this requires the following changes: take out the *for* and *printf* lines and insert the following in their place.

```
i=1
while(i<10)
[illegible]
printf("%d squared is %d[illegible]
i++
[illegible]
```

In this situation *i* must be set up before the loop begins and must be incremented within the body of the loop itself. Since there are two lines within the loop they need to be made into a block starting with { and ending with }. The while command continues looping only if the argument (i<10) is true and in this case exits when *i* is equal to 10.

The other most common and perhaps vital structuring command is *if*. In C this takes the following form:

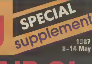
```
if(expression)
    do this if expression is true
else
    do this otherwise, though this is optional
```

The simple game program (see box) shows all of the above commands and ideas plus a few others in use. Notice how the AND, OR, NOT and equals differ from other languages. Logical AND is &&, bitwise AND is &, logical OR IS || and the ! before = is not equal. For equals two = signs are used so in a test == tests for equality, not = as is usually the case. The program will run in any C; just type it in and follow your normal compiler commands.



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POPULAR Computing WEEKLY



1987
8–14 May

THE SINCLAIR QL

INSIDE

News of new software releases from third party developers

Desktop publishing and printer fonts to turn your QL into a newsroom

The QL as a graphics station, ICE and CAD

packages reviewed

Exclusive review of Digital Precision's IBM-type keyboard

Never forget, wise computer owners say, that the QL, for all its faults, was the first affordable 68000 based micro. Apart from the Amiga it is still the only 68000-based micro offering true multi tasking, the Atari ST doesn't.

Support for the QL then is still strong, from users and a small number of third party software and hardware manufacturers.

In this supplement we're looking at Digital Precision's replacement keyboard – IBM quality for your QL? We also have an exclusive preview of the desktop publishing software package which combines power with ease of use.

CAD software from Rubicon micros and Eidersoft's advanced mouse systems among many others go to prove that the QL is far from obsolete ◀

NEWS

WIFEY

Housewife is a housekeeping program from DJW Software. A real housekeeping program. Nothing to do with computing utilities. With QL Housewife you can make up a personalised shopping list based on your usual shopping habits and access a choice of three recipe programs: for starters, main courses and desserts. You can name any number of guests from 1 to 20 and you will be given the recipe of your choice with the correct quantity of ingredients, all quantities in metric and imperial, cooking temperatures and an option to print out.

Obviously a menu driven program. Housewife costs £4.99.

DJW Software, 11 Pound Close, Bramley, Hants RG26 5BJ. Tel (0256) 881701 ◀

REVIVED

PDQL Software of Birmingham is still adding programs to its list and now has over 30.

Recent additions include **Lazarus**, a file recovery program which operates on all or any lost files (and not only as the ... might perhaps expect, on Forth) £20 and an invoice generator for £30.

Cash Trader, a debugged, extended and speeded up version of the original Quest Cash Trader, is now available to new users at £50 as well as an update to registered users at £10.

Name And Address is now available on disc as well as microcassette in standard Archive or ArchRTM versions. The newest feature of this popular program is a "secure" procedure allowing data to be backed up easily before the changes are finally saved.

PDQL, 49 Frederick Street, Birmingham B1 3NH. Tel 021 233 3042 ◀

TURBO

Athene Consultants has produced a program which reconfigures Quill to speed up the cursor which, along with other small changes, effectively speeds up the whole program and ... no small matter ... writing more than the odd ... works throughput.

QL TurboQuill costs £5 and can be ordered from Athene Consultants, ... Hills Grove, Fareham, Hants, who can also provide more information about the program. If ordering, please quote the version of your Quill so that a matching TurboQuill version can be provided. CONFIG_BAS does not work with TurboQuill so all the default parameters of Quill have to be set up before the turbo program is applied ... the increase in speed is well worth this minor inconvenience ◀

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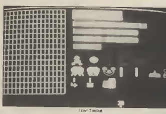
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Icon Toolkit

SMILES

Smiling Software is still offering reduced prices on a range of software including **Sound Experimenter** at £5, **Icon Toolkit** at £5, **Game Toolkit** at £5, the **Complete Toolkit** (the two Toolkits mentioned plus Character Toolkit) for £10, and the machine code rubberised asteroids' arcade game **Blobz** for £3

Sound Experimenter

Smiling Software, 10 Fir Road, Marple, Stockport SK6 7QN ◀

CHAR-ED

Chared by Colin Opie of Vida Rebus is a font editor program designed as a utility to work with Toolkit II. The Toolkit ROM allows SuperBasic users to select character sets other than those inbuilt in the QL, as well as altering the pixel block size of characters. Chared, in addition to Toolkit's own facilities, supplies extra pre-defined character sets, the creation and editing of new fonts, printer dumps and use of new creations in SuperBasic programs.

The program is designed to be easy to use with a system of menus and prompts such that the user can learn to manipulate it quickly without continually turning to the manual sheets, which can then be clipped away in the QL Users Manual for reference on the predefined character sets when needed. Re-defining characters and overcoming the limitations of the QL's character grid is covered in detail.

Care Electronics is also offering the **Toolkit II** of EPROM and Liberations Software's **QLiberator** Basic compiler together for £74

Care Electronics, 800 St Albans Road, Garston, Watford, Herts WD2 6NL. Tel. (0923) 672102 ◀



◀ Chared – font editor program designed as a utility to work with Toolkit II

GROWTH INDUSTRY

Superplant sounds like another unlikely comic character, but is in fact a company which writes software on plants. Toby Hodd, a professional gardener for twenty years, found that his customers asked him such complex questions about plants and gardening that he began to feel that he needed a computer to answer them all. He was then inspired to write a series of data banks, based on the XChange Archive data base package, which would give advice on the choice and care of plant groups.

The five databases so far cover wild flowers for the garden, fruit trees and bushes, house and office plants, trees, shrubs and climbers, and flowering garden plants. Beside information about habitats, plant characteristics, soil types and plant needs, Mr Hodd, who has a keen interest in conservation, has included notes about plants which are attractive to wildlife, and trees and hedging shrubs useful for planning environmental improvements.

The databases can be bought as a complete package for £39.00, any one of the programs with the basic gardening module for £11.95, and as additional packages for those who already have the basic gardening module for £8.00 each. The programs are available on microdrives or a choice of 3½in or 5¼in discs.

Superplant Software, Llangeitho Nurseries, Llangeitho, Tregaron, Dyfed, Wales SY25 6QG. Tel. 097 423 223 (from 10am to 8pm) ◀

LUCKY BAG

Pyramide Software is starting to release a library of cartridges featuring all kinds of useful programs, programming tips, mini utilities, routines and games sent in by professional and amateur QL users, particularly in SuperBasic. Called **Bag of Tricks**, the first two volumes contain respectively a character set, PEEKs and POKEs, a screen compressor, a Basic version of Pacman and various utilities (volume one) and a set of routines for tracing files, drives in use and free memory space, some games, some Graphic Toolkit out-takes, and more utilities (volume two).

Information about Bag of Tricks and about submissions for future volumes from

Rio Promotions Ltd, 28 Waverley Grove, London N3 7PX. Tel. 01-349 2764 ◀

PUBLISH OR BE DAMNED

AN EXCLUSIVE REVIEW OF DP'S DESKTOP PUBLISHER BY HELEN ARMSTRONG, AND RON MASSEY ON HALLMARK'S Q-WRITER FONT CREATING PACKAGE

Put simply, the purpose of a desktop publisher is to provide text and illustrations, arrange them to make a presentable page, and allow that page to be printed. It must, at the very least, be a step up from a typed page with a photocopied doodle. I would say that the minimum step up implies graphic capture, justified and unjustified columnar layouts, and a choice of headline characters in adjustable sizes. After all, you can do a helluva lot with a good typewriter, a photocopier and some Letraset.

Desktop Publisher requires a 256 memory expansion and incorporates twelve graphic (headline) fonts and eight QL text fonts as standard. There are 150 integral graphic symbols (including a choice of trees, for arborophiles) and 160 paintbrush styles. What this latter means in reality is that you can use any of the graphic symbols as a paintbrush, as well as the standard shapes. The way is paved for an almost bottomless supply of backgrounds, borders and patterns. The decorative fonts are proportionally spaced, but all character proportions can be redefined horizontally and vertically, pixel by pixel, and descender/ascender lengths altered. All characters and graphic fonts can be merged with AND, OR, and XOR options, inverted wholly or partly, mirror imaged, boxed, inverse boxed (wholly or partly), magnified up to 15 times in either axis (this includes the cursor path), striped or stippled, and rotated through steps of 90 degrees (sorry no tilts ...)

Extra fonts

The program travels on two cartridges which may well carry a few extra fonts. Extra fonts can be imported. Desktop Publisher will load any ASCII file, plus Quill files with non ASCII characters, in fact, say the programmers Cliff and Andrew Astrand, anything which can be translated into an uncompressed mode. All fonts can be edited, or adjusted letter by letter during makeup.

Text can be justified pixel by pixel, which allows for very accurate placement of annotations on drawings (horizontally, vertically, sideways or even upside down) and carefully spaced text. Text can be justified, ranged left or right, or centred, made bold, italicised to the left or the right or inverted. There are four different styles of underlining, including double and single, vertical and horizontal ruled lines and boxes, columns to any width, variable line feeds on screen, and window governed cut, copy and paste over both pages. Not only does the page scroll, but the contents of any window scroll as well. The program is completely compatible with Quill, and performs the full range of editing functions on Quill texts. DP's preferred method of generating outside text and graphics, of course, are their own programs **The Editor** and **Eye Q**, which I'll be having a brief look at. Text can be generated inside the program, and in the smallest text size and minimum line feeds (without actually overlapping) each page can handle up to 16K characters. A full page of work stores in about 96K, or one microcassette.

As well as generating patterns and line graphics, Desktop Publisher includes clip art for pinching, and can import graphics from various sources including **Easel** and (if you have one) via a digitiser, all fully editable.

There are four different styles of screen cursor (partly for accurate editing, partly for fun), and a two-cursor vertical ruler appears on the main screen. A calibrated green grid can be called up. The working area scrolls and pans, and can be joystick controlled.

Access to designer screens is fully hierarchical, and any user who 'gets lost' or performs a wrong command inside the editing levels can get out safely and quickly via the esc key without damaging the work or causing the program to lock.

Naturally, DP's pride and joy, the **Turbo Superbasic Compiler**, was used in writing the program, and Cliff said 'We had to insert great long loops in places to stop the program from moving too fast for people to feel comfortable with. And then Freddy brought us the Turbo update, and we had to put even longer loops in.' More important even than speed, to my mind, is the very complete set of status reports along with the font/graphic menus and instruction menus which are displayed to the right of the working area at all times. Although the program is fully menu-driven, nearly everything can be done with single keystroke commands instead. The cursor can be homed, and caps lock is indicated on screen.

Desktop Publisher supports two paper formats and four different print routines, printing A4 and foolscap in both landscape and portrait, with vertical and sideways printing options for either. The printer driver is as usual directed towards Epson compatibles, but is reconfigurable for most other suitable printers (ie not daisywheel) in both serial and parallel modes, and with multiple pass printing up to five times for a sharper finish.

The two packages which are being offered alongside Desktop Publisher, **The Editor** and **Eye-Q**, have already been around for a while. DP stress that Desktop does not require either of these progs to operate but, obviously, the dedicated programs have more facilities than integral custom designers.

Eye-Q by itself costs £29.95, and is a freehand/box/rubberband style graphics generator. The basic functions are paintbrush, airbrush, erase, fill and rubber bands in circle/elipse, line/arc or rectangle/block. Operation is by window menu and by single keystrokes — a great many functions can be performed on the graphics screen by the latter: for instance, the size of the cursor (and therefore of the paintbrush) can be changed using CTRL W. CTRL T allows the typing of text characters over the graphics screen in various different modes, and the program incorporates a font editor.

Screens can be saved whole or in part

RIPOFFS AND SONS

(window selected), compressed or uncompressed Screens and fonts can be saved to Basic as well as to storage media, and with any extended QL more than one Eye Q can be run at a time

Status information is displayed on an unobtrusive status line at the top or bottom of the screen

The Editor now £29 95 (£39 95 for the expanded QL version) is a not a word-processor It is a text generator which can handle any kind of text file document, program, as well as a range of special characters for handling ASCII and control commands as if they were normal text

The great advantage of The Editor apart from its flexibility of application is speed The advance old age suffered by users waiting for certain wordprocessors (including the vaunted Amstrad PCW much used in this office) to scroll through, delete or move blocks of text is not a problem

The program does not impose its own format on the text except as the user specifies and no 'control' data travels with the output, which is then clean to be handled by another formatting source, such as Desktop Publisher Files can thus be generated for final embellishment elsewhere or brought in from other WPs (Quill in particular) for bulk alteration and reformatting

At the moment, Desktop Publisher will not take photographs or make the coffee, but they're working on it It certainly will do almost everything you want from a DTP package and in conjunction with Digital Precision's other programs forms a very impressive system ◀

Price. £69 95, with Eye Q £94 95, with Editor £104 95, with both £129 95.
Supplier Digital Precision, 222 The Avenue, London E4 9SE, 01 527 5493

Usable [illegible] programs [illegible] using a text editor [illegible] edition of **Q Writer** [illegible] ten distinctive fonts [illegible] configuration versions [illegible] microdrive cartridge.

Users of QLs without [illegible] expansion can configure the [illegible] program module so that only one or two selected fonts are held in memory at any one time Fonts are loaded with the **NLQ_LOAD drive_fontname,font_number** command Whenever a new font is loaded using a current font number, the previous font is cancelled.

Alternatively, users of expanded machines may opt to use the special [illegible] program module, with eight of the fonts built in and may load up to a total of 32 fonts at any one time, each of which is identified with its own number code

Switching between fonts is done by using appropriate codes and can include any other printer control codes supported by the *Q Writer* system Printer commands are initialised with *Q Writer*'s port emulation mode by adding a line to *Quill*'s or *The Editor*'s [illegible] program. **NLQ_USE** *device* (ser or par)

Changes of typeface in SuperBASIC are made by sending *chr$* control codes to the printer, initialised by the number two Starting a particular typeface, such as *Q Writer*'s Roman font number five would be done by inputting in SuperBASIC **Open#3, NLQ/5**

All subsequent font changes are made by prefacing the font number required with the number 2 Typically a command from SuperBASIC for changing from one font style to font four a particularly good Olde English typeface is made by inputting **Print#3, chr$(2), chr$(4).**

If used with an extension toolkit supporting BPUT font styles and any of the printer control commands supported by *Q Writer* may be sent to the printer from SuperBASIC by prefacing a block of text in a particular typeface with the command **BPUT#3, 2,** ***font no***

Users of *The Editor* can produce an equivalent control code insertion in a block of text by inputting characters <CTRL><SHIFT><C> producing *The Editor*'s own character "1", with an over score) *2,font no* followed by any other *Q Writer* control characters required

[illegible] commands supported directly by the *Q Writer* [illegible] include [illegible] Olde English [illegible] expanded [illegible]

Q Writer's [illegible] a single [illegible] font [illegible] by a previous font.

Of particular interest is a facility for selecting and deselecting character space out (17 and 18, respectively) and another facility for selecting either normal width or double width (15 and 16, respectively). The latter facility produces a typeface width increased to 3½ times than that of the normal width.

Q Writer's fonts may be used with any Epson compatible printer either directly from SuperBASIC or from within text management programs such as Psion's **Quill** or Digital Precision's **The Editor**

The only real limitation encountered with *Q Writer* is that if two or more jobs are running concurrently in the QL, they will remove all data from the [illegible]

Olde English is complete
Olde English expanded
Expanded Olde English with Space Out
Standard Data font example
Unexpanded Data Font with Space Out
Expanded Data Font
Expanded Data Font with Space Out

NLQ [illegible] unpredictable results.

An omission from review copy of *Q Writer* is that it did not include a font editor for users having particular [illegible] or special symbol requirements, although [illegible] have promised to provide a character editor for *Q Writer* within the next three or four weeks.

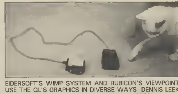
A well thought-out, easy to get on with program, my only criticism of *Q Writer* is its rather minimal documentation. Of its nature, *Q Writer* is not a difficult program to get to grips with, quite the contrary. But, as with so many programs of this type, it is easy to overlook useful applications ◀

Supplier TK Computerware, Stone Street, North Stanford Ashford, Kent CT25 6DF, 0303 81 3801.



TURBO V1.14
THOR COMPATIBLE
' Dramatic bug free an excellent program a great advance on Supercharge more capable (than the latest version of QLiberator) the fastest SuperBASIC compiler so far mind-bending takes SuperBASIC and the QL into a new era With TURBO we should start to see programs which are unthinkable on any other small micro
Upto 100X speedup on BASIC
The TURBO System costs £99.95 COMPLETE
TURBO IS BRILLIANT PRESS COMMENT FROM EVERY SOURCE IDENTIFIES IT AS THE MOST OUTSTANDING BASIC COMPILER FOR ANY MICROCOMPUTER
BETTER BASIC EXPERT SYSTEM
THOR COMPATIBLE
BETTER BASIC costs £24.95 complete with manual
SUPERCHARGE V1 19
£49 95 with 118 page A4 Manual.
GAMES
There is a misconception among those who don't own a DP game that because DP produces the best serious software DP can't also be good at games. We strongly disagree!
BLOCKLANDS £9.95
An addictive game at twice the usual speed QL WORLD
DROIDZONE £9.95
mind numbing" SINCLAIR USER
For sheer blasting you would be hard pushed to beat DROIDZONE QL WORLD
SUPER ARCADIA £9.95
We flipped over SUPER ARCADIA HOME COMPUTING WEEKLY
SUPER REVERSI £9.95
Did you think Psion Chess was strong?
SUPER BACKGAMMON £12.95
Brilliant QL WORLD
Any 3 for £24, any 4 for £30, all 5 for £36!!
SUPER MEDIA MANAGER V1.12
THOR COMPATIBLE
£39.95 COMPLETE WITH 95 A4 PAGE MANUAL OR £24 95 FOR A CARTRIDGE ONLY VERSION
PROFESSIONAL ASTROLOGER V1.5
NEW FASTER VERSION (TURBOCHARGED)
THOR COMPATIBLE
£59.95 Complete with huge manual, or £69.95 with Astronomer
SUPER ASTROLOGER £24.95

COOL LOOK AT CAD



EIDERSOFT'S WIMP SYSTEM AND RUBICON'S VIEWPOINT USE THE QL'S GRAPHICS IN DIVERSE WAYS DENNIS LEEK ASSESSES THEIR STRENGTHS AND WEAKNESSES

Eidersoft's ICE has become such a standard fitting for serious QL users that not a few of us would have to think twice if the machine booted up first thing in the morning without the dustbin in the right hand corner. Icon Controlled Environment, for the information of the others, is a WIMPS type icon-driven front end program which allows you to LOAD, FORMAT, COPY, RENAME, etc etc your files without having to type out 'mdv1_' and the rest every time. The lazy/sensible person's command list. ICE is installed in a plug in ROM cartridge, so it boots virtually automatically, and it supports a variety of other icon software such as ChoICE, which allows five way multi tasking, among other things, and ICE Toolkit which incorporates ICE features in your own programs, all at a reasonable price.

Last year Eidersoft consolidated ICE's usefulness by bringing out a mouse controlled version, along with two grades of mice. Icon driven menus are ideal for people with a steady hand and no keyboard skills. Being the opposite, I generally prefer not to use them, but once you are committed to icons or indeed anything which can't be set up for single keystroke commands, a mouse is a godsend.

The ICE mice have the basic ICE system already installed in the interface, an alternative to buying the mouse and fitting it to a previously owned ICE. There are two versions, the Mouse at around £40 and the 'fully ball raced' Supreme Mouse at around £60. Both our samples worked pretty well, especially considering the adverse conditions on my working surface, which is not usually configured for mice.

Having tested the mice on ICE and ChoICE and quickly getting used to moving the cursor around via the desktop, I went on to try out Eidersoft's ArtICE freehand graphics package. It was here that I had my first grouse with the handbook which, like many other user documents, is perfectly clear if you know in advance what you are supposed to be

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"True three dimensional computer aided design for the Sinclair QL" says the subtitle on Viewpoint's smart black and white packaging. Elsewhere in the comprehensive handbook, it reminds you that it makes sense to plot out drawings of any complexity on graph paper first. Apart from the neatness of the final output, CAD packages are only an advantage if they are flexible enough to make real savings in time and trouble. Viewpoint's handbook takes considerable care to orientate the user so that, without contracting any false sense of security, I found that I could start screen drawing without tears.

As it was a while since I had used a CAD package, I went for the demos first. Pressing C gave me a blue wire frame cube with the x, y and z co-ordinates in yellow and red. I wasted time trying to remember what r, ϕ and θ meant, but once I dropped that and did as the instructions told me, I found that it was easy to rotate, zoom in and zoom out around the cube in larger or smaller jumps.

Using ALT with the cursor keys gives much larger increments, but with the alphanumeric keys it stops any further progress, so that rotating can be done in large jumps and zooming in slightly more modest steps. I idly enlarged the cube right off the screen and then had a tedious job on my hands to bring it back again before I had realised that I could zoom it much faster by using P. All the movements can be repeated by holding the keys down. Reconstruction of a complex drawing after each movement in mode 8 graphics is by no means slow, but it becomes tiresome if you are doing a lot of manipulation, so the screen can be toggled to mode 4, where redrawing takes place very quickly.

The second demonstration is a set of spherical polar co-ordinates which can be tumbled about to get a clearer picture of what different axes and co-ordinates mean in practice.

Constructional screens can appear either in VIEWPOINT mode or in entry mode, and can be toggled (from entry mode only, although it affects either screen) between mode 4 and mode 8 graphics. Entry mode accepts the instructions which build up the figure. For simple three dimensional shapes this is easy: the program provides a number of standard shapes: box, circle, sphere, rectangle, line and a polygon with any number of sides between 3 and 10. There is also a mirror image command which speeds up the building of symmetrical forms, but must be treated with caution if you don't want to end up with a mirror image in the wrong plane – and although there is an immediate delete function, I haven't yet succeeded in 'undoing' a mirror image.

Other commands which speed up drawing are Join, which joins two numbered co-ordinates with a straight line, and Search, which enables co-ordinates to be accurately 'grabbed' and identified in the lower left hand subscreen (and also identifies the real whereabouts of the cursor, which by the very nature of the process is quite easy to lose track of).

Other commands display a set of xyz axes over the drawing, or alternatively superimpose a calibrated grid in the same plane as the cursor. (T)ranslate moves the whole drawing along one of the axes, and O(rigin) moves the cursor instantly back to the screen centre, which can be an essential move if another manipulation has moved the cursor suddenly off screen. W(rite text) allows text to be overwritten on the drawing. The text does not become

doing. The quibble, for instance, that it isn't entirely clear WHICH of the three programs prefixed BOOT you are supposed to operate can be answered by saying that only a noddy would run the wrong file. But a user book should guide even a noddy through a loading sequence without confusion. Throughout the rest of the manual, too many steps are referred to vaguely or out of sequence.

The mice replace manual ICE's double click/single-click operation with the centre/left hand buttons on the mouse. In ArtICE, the left hand button is used only to change the ink colour during drawing.

The QL's processing power means that it can handle complex graphics quickly. The mouse enables quick and accurate (depending on how steady your hand and eye is) freehand cursor movement. Booting ArtICE puts you straight into a black screen with a tuppeny sized white dot for a brush. This is the experimental screen for new users, where you can practice painting broad strokes while scrolling through the ink colours using the right hand mouse button, and turning the ink on and off with the left one.

However, these are the only two choices which can actually be made within the drawing screen. All other changes have to be made through the main icon menu, which entails much cursor shifting and clicking to and fro, which slows down the whole process. To take a simple example, doing a 'duck on a pond' scribble, the fill function has to be reselected from the main menu for every change of ink colour.

Using the crosshair brush, the colours can be changed pixel by pixel. The ×7 screen magnifier is helpful here, but it can be done on the full screen if you have patience and good eyesight.

As well as plain ink (the usual eight colours in mode 8 and four in mode 4) two colour effects, airbrush and stipples/stripes, can be obtained from the menus. Airbrush simply gives a random stipple in the track of the brush, with a choice of five stipple densities. The INK menu (which does give you visual indication of which ink colour you are changing to – you just have to go through two menus to find it) allows a choice of plain, or any two colours mixed in regular stipple or one-pixel bars, plus their inversions.

Aborting the last operation is done via the Undo menu, a window which appears on the drawing screen when the main menu is selected by pushing the middle button on the mouse.

RECOL(our) allows changing of all or any of the colours over the whole or part of a screen. Selecting a part of the screen is done via cursor-set pull down windows. This is useful for altering one colour in a small area, such as the colour of a piece of text. Unfortunately, the process is made more cumbersome because an "alternative" colour has to be selected for all eight colours every time RECOL is used, even where only one colour is actually going to be changed.

COPY allows areas of the screen to be bodily transferred, duplicated and saved individually as files for future use. This includes an IGNORE function so that you can discard one colour, such as an unwanted background, from a block before you move it.

The manual refers several times to the fact that ArtICE uses all the available memory on an unexpanded QL, but this fact notwithstanding I would still have liked to see some status information, for instance, ink number and x/y cursor position, on the drawing screen to save a lot of clicking and cursor leaping about.

Fast graphics, slowed down by the select procedures – but I still found ArtICE enjoyable and staightforward to use, even though the manual is like a jigsaw puzzle. (The manual index gives eight entries, all concerning the mouse, in the first three pages, and only two entries for the other twelve pages!) And at £14.95 it is good value and an attractive add on to ICE and the MICE. There is also the non mouse version with only minor differences to the mouse one – ideal if you have a talent for drawing curves with the cursor keys! ◀

Supplier: Eidersoft, The Office, Hall Farm, North Ockendon, Upminster

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part of the drawing, but remains (and prints out) at the screen position where it was entered. It can be removed wholesale by CTRL W, but not edited.

Colour is deployed by the cursor, and the colour of the next piece of the drawing to be laid down can be reselected at any time via function key 1 and a menu. There is no colour fill function, and personally I found the colours more distracting than helpful on complex drawings. They occasionally helped to establish perspective – this is a matter of personal taste.

Colours already laid down in either mode can't be deliberately changed (although switching modes automatically causes the usual changes). Indeed, once it is on the screen, nothing further back than the last command can be altered without re-starting the entire drawing. D(elete) removes the last operation (this is effectively limited to the standard library shapes and the Join function) but CTRL D removes the lot, and the user's manual firmly reminds the user to Save the drawing regularly.

Solid three dimensional figures (as opposed to wire outlines) are achieved by hidden line removal using back surface elimination, which only works fully for single convex polygons. Counting the vertices and storing the co-ordinates is a tedious process, but once this is done the hidden line function can be toggled. According to the handbook, a cheese is a single convex polygon and a jet aircraft isn't, so the hidden lines work less well for more complex drawings. Hidden lines can be selected, viewed and saved by stages, which assists in reaching the desired effect without fouling up.

Finished drawings can be saved as three-dimensional co-ordinate files, and printed out as they appear on the screen from the f5 menu. A reasonable amount of information is given on printer control codes in the handbook, with examples for Epson codes. On-screen images can also be saved to a machine code subroutine for use with other SuperBasic programs, and detailed instructions are given for doing this.

Viewpoint is not a professional CAD package. There is no facility for devising your own library shapes for inclusion in other drawings, and the grid calibrations are not accurate to the nearest micron, boos from my electrical drawing department, and serve him right for being a cheapskate, because you can't buy that sort of package for less than several hundred pounds.

Viewpoint is very neat and tidy, the screen resolution is good even on my low resolution screen, and the handbook has been written with great thoughtfulness and so far as I can see very few and very trivial mistakes.

This original version of Viewpoint from November 1986 is loaded into a permanent memory position, but Rubicon tells me that there is a newer version which will exec alongside other programs in the QL's memory. ◀

Price: Cartridge £19.95, disc £20.95
Supplier: Rubicon Micros, 11 Bannerdale Road, Sheffield S7 2DJ

HELEN ARMSTRONG REVIEWS THE LATEST QL REPLACEMENT KEYBOARD, AND CONCLUDES THAT DIGITAL PRECISION'S IBM-TYPE UNIT MAY WELL BE WORTH THE MONEY



CHAIRMAN OF THE BOARDS

The QL is a natural for a replacement keyboard: many of its 'full travel' keys seem to have a one way ticket, the resulting black holes remaining as sharp-edged elephant traps for unwary fingers, transforming the would be touch typist into a frustrated twitch typist.

ABC Elektronic's **Deluxe** keyboard, marketed by Digital Precision, is an extension (rather than a replacement) keyboard. The Deluxe started its design life as an IBM PC-XT device, which means that, with the interface provided by DP, your QL is graced with a professional quality keyboard.

There are ten functions keys to the right of the main keypad, which correspond to F1–F5 and SHIFT F1–F5 on the QL, and are also user definable. On the left of the keyboard is a standard numeric keypad complete with centaring blip on the 5. And there is – oh joy – a backspace key which deletes the character to the left without using CTRL. The whole unit is about 28mm high, and there is a pair of strong integral fold-down supports at the back of the base for better keyboard tilt. And they won't fall off.

The key feel is fairly light but not loose or spongey, and no bounce. Trying it for speed, I found that the screen input kept up with the fastest typing speed I could manage, and stopped when I stopped. Freddy Vachha of DP was prepared to be a bit less namby pamby, smacking the keyboard vigorously with the flats of both hands a few times. The input got well ahead of the screen, but the buffer coped admirably and spent the next 20 seconds or so quietly catching up.

"The Schon keyboard was a valiant attempt, but it costs thousands just to set up a mould for injection moulding, so they have had to opt for vacuum moulding. Why make the thing yourself when you can buy a high quality, industry standard injection moulded keyboard from someone who already has a production line, and concentrate on the interface?"

Installation is not difficult, but it requires a certain amount of care. Having opened the QL, ribbon cables which connect the present QL keyboard must be disconnected and the 40-legged 8049 must be eased gently out of its multiway socket and the new chip carrier, an integral part of the interface, carefully located in the socket without missing and bending any of the legs. Once correctly located and driven firmly home, the 8049 goes back into the new socket, and the interface becomes a permanent part of the computer. The interface board is designed to fit over and around the present components without bending anything aside, and with or without the aluminium plate under the keyboard in place.

The interface goes through any available port or a purpose-cut slot in the case – the ROM port is recommended, as there is a plastic pillar just inside round which the cable can be made fast before fixing the connector in place.

The new lead connects via a 5 pin DIN socket to the corresponding plug on the end of a coiled lead to the keyboard.

Apart from the aforementioned keys, there are one or two which do nothing (a by product of their IBM style provenance). The Sys Req key locks out the keyboard input. A full system reset can't be done from the extension keyboard, as the RESET button on the QL acts directly on the internal hardware. All the QL's characters are supported. Caps lock and Number lock (for the keypad) both have LED ON indicators.

The draft of the user documentation which we saw is well up to normal DP standards of obsessive detail, including instructions for ridding yourself of static before opening the QL, and advice about what to do if an excess of peripherals causes overheating in the QL, including an offer to replace the voltage regulator as a lasting solution. This is sound practice for anyone with a QL or a Spectrum incidentally, and in the QL it doesn't even require soldering.

DP stresses the Deluxe's full compatibility with QDOS and with all makes of disc drives, memory expansions, printer interfaces, mice, etc. With the keyboard, which is available in black as well as the usual beige/grey, they are also giving away a Giga Basic cartridge.

Despite Saga Systems' plans to launch cheaper QL replacement keyboards, it may well be that if you want the best the Deluxe keyboard may be the one for you ◀

Price: £89 95

Supplier: Digital Precision, 222 The Avenue, London E4 9SE, 01-527 5493

Spectrum Rom Calls

Russell Thomas

More of the System Variables are detailed along with 2 editing command

[illegible]	[illegible]
[illegible]	[illegible] the lower part of the screen
[illegible]	The No. of the line which will appear at the top of the screen in [illegible]
[illegible]	The starting point for RND. [illegible] is set by the RANDOMIZE command
[illegible]	[illegible] the number of frames sent to the [illegible] number use the following [illegible] PEEK(X+2) where X is the starting [illegible]
[illegible]	[illegible] printer position Kempston use this [illegible] printing width [illegible] for their Centronics E interface
[illegible]	[illegible] anything you like
[illegible]	[illegible] If you want to stop 'scroll?' being printed use [illegible] 255 in your main loop
[illegible]	[illegible] empty one, [illegible] only due to a nice little bug in the Rom [illegible] a SV although POKING it with 181 prior to saving a program, [illegible] the start tape message and instantly saves the program. Great for saving blocks and blocks of data
[illegible]	VARS PROG=PROGRAM LENGTH

Some of these commands allow you to abort editing so far. The manual is in correct when it says you will not be allowed to leave an incorrect line. For instance, if you have just deleted half of a perfectly good line, if you use EX N and then return your original line will still be there! This can work the other way around of course. If you have just edited out a bug in a line and fail to press enter and use EX N instead, your new line will be forgotten and your old line put back.

Editing commands

Now something purely for 128 owners. Those extra editing commands available with the keypad can be found on the keyboard. I've compiled a list but if you know of others then let us all know.

(GR=GRAPH MODE, SS=SYMB SHIFT, EX=EXTENDED MODE)

GR V	move to top of last page
GR W	move to top of first page
GR X	move to end of current line
GR Y	move to start of current line
GR Z	switch screen formats
SS I	move down half page
EX M	move to end of current line
EX W	delete to end of current word
EX E	delete previous word
EX K	delete from cursor to start of line
EX T	move to top of last page
EX I	move to previous word
EX J	delete from cursor to end of line
EX N	move to top of first page
EX P	move up half a page
EXSS 2	move to start of line
EXSS 8	switch screens
EXSS J	move to start of next word
EXSS K	delete char under cursor

PROGRAMMING: C64

Expanded Characters

Robin Davies

When displaying text on the Commodore 64 you are stuck with a standard size character set. The following routine will allow you to print text at double width making each letter 8x16 pixels wide. The program is written entirely in Basic so adding it to programs of your own should prove to be easy.

```
10 REM EXPANDED CHARACTERS
11 REM POKES [illegible] 1    NORMAL CHARACTERS
12 REM POKES [illegible]    EXP CHARACTERS
13 REM
14 M=53248        REM MAIN POKE LOCATION
15 C=1024         REM TOP SCREEN LOCATION
16 C=55296        REM TOP COLOUR LOCATION
17 POKEA+32,0     REM BORDER BLACK
18 POKEA+33,0     REM SCREEN BLACK
19 PRINT"[illegible]"     REM CLEAR SCREEN
20 POKEA+24,[illegible]   REM EXPANDED ON
21 REM
22 REM NUMBERS BELOW ARE CODE NUMBERS
23 REM FOR THE LETTERS (5=E 24=[illegible] ETC.)
24 REM
25 DATA 08,24 16,01 14 05 04 [illegible] 0[illegible] 0[illegible]
26 DATA 01 1[illegible] 01 03 20,05 13 19 32 04
27 DATA 05,13,1[illegible] [illegible] 0[illegible],15 1[illegible] [illegible]2,32,3[illegible]
28 DATA 16,46 05 46 [illegible] 46,32 02,25 3[illegible]
29 DATA 16 15 0[illegible],0[illegible] 14 [illegible]2,04,01 [illegible] 0[illegible]
30 DATA 05 1[illegible] [illegible],06 15 1[illegible] 22 [illegible] 1[illegible] 41
31 REM
32 E=[illegible] F=12[illegible]44
33 FORD=1TO2      REM LINES TO PRINT
34 FORG=1TO30     REM NUMBER OF LETTERS
35 POKE1 [illegible] POKE5[illegible]334 1
36 FORH=0TO1 POKEB+G+H*40,E
37 POKEC+G+H*40,1 E=E+1 NEXTH
38 READI POKE5[illegible]334 0 POKE1 51
39 FORH=0TO[illegible] K=PEEK(H+(I*[illegible] +H)
40 FORJ=0TO1 POKEF K F=F+1 NEXTJ H [illegible]
41 POKE1 [illegible] POKE5[illegible]334 1
42 B=B+120 C=C+120 NEXTD
43 FORM=1TO2000 NE[illegible] PRINT"[illegible]"
44 POKE5[illegible]7[illegible] [illegible]1  REM EXPANDED OFF

READY.
```

Icon Toolkit

Simon Goodwin

The final instalment in the Icon Toolkit series includes an icon designer.

This program allows the user to design 5 icons at a time. These groups of icons can then be merged together to form a larger file consisting of up to 255 icons. On loading the program a 16 × 16 grid is displayed along with a menu. The cursor is moved using the cursor keys. Pressing the space bar fills a block with the current pen. Selecting the f2 key turns erase mode on or off. In erase mode pressing *SPACE* erases the current block. Other menu options allows the user to change the pen or ink colours. Icon designs can also be inverted or mirrored. Finally files containing 5 icons can be loaded or saved to tape or disc.

To use more than 1 set of 5 icons in a program type

10 memory [address 1]
20 load set0 [address]
30 load set1 [address]+(1*320)
40 load set2 [address]+(2*320)

The variable *[address]* can be a number from 368–40999



```
10 REM ...........................................
...............................................
20 REM .. ...                          I C O N  D
E S I G N E R                              . ....
30 REM ......                           by Simon
T.Goodwin                                  ......
40 REM ...........................................
...............................................
50 MODE 1
60 GOSUB 640:GOSUB 660
70 TAG
80 GOSUB 270
90 WHILE 1
100 IF INKEY(1)=0 AND x<240 THEN GOSUB 2
70:x=x+16 a=a+1:GOSUB 270
110 IF INKEY(8)=0 AND x>0 THEN GOSUB 270
:x=x-16:a=a-1:GOSUB 270
120 IF INKEY(2)=0 AND y>144 THEN GOSUB 2
70:y=y-16:b=b+1:GOSUB 270
130 IF INKEY(0)=0 AND y<374 THEN GOSUB 2
70:y=y+16:b=b-1:GOSUB 270
140 IF INKEY(47)=0 THEN IF ERA=1 THEN GO
SUB 300:ELSE IF  ERA=0 AND TEST(x+4,y-8)
=0 THEN PLOT -5,-5,col:GOSUB 300
150 IF INKEY(5)=0 THEN COL=COL+1:IF COL=
4 THEN COL=0:TAGOFF:LOCATE 10,20:PRINT "
 PEN.";COL:TAG:ELSE TAGOFF:LOCATE 10,20:
PRINT " PEN.";COL:TAG
160 IF INKEY(13)=0 THEN GOSUB 330
170 IF INKEY(14)=0 THEN FOR n=1 TO 50 NE
XT n:IF ERA=1 THEN ERA=0:SOUND 1,100,20:
ELSE ERA=1.SOUND 1,100,20
180 IF INKEY(12)=0 THEN GOSUB 400
190 IF INKEY(4)=0 THEN GOSUB 500
200 IF INKEY(20)=0 THEN GOSUB 920
210 IF INKEY(10)=0 THEN GOSUB 1140
220 IF INKEY(11)=0 THEN GOSUB 1300
230 FOR qw=1 TO 100:NEXT qw
240 WEND
250 END
260 :
270 PLOT -5,-5,3:MOVE x,y:PRINT " ";:RET
URN
280 RETURN
290 :
300 IF ERA=0 THEN MOVE X,Y:PRINT CHR$(14
3);:Q(sp,B,A)=COL:PLOT 542+(A*2),94+(Y/1
6)+2+(SP*48),COL:RETURN
310 IF ERA=1 THEN Q(sp,B,A)=0:TAGOFF:LOC
ATE 1,1:PRINT CHR$(23);CHR$(0):PLOT 542+
(A*2),94+(Y/16)*2+(SP*48),0:LOCATE 1,1:P
RINT CHR$(23);CHR$(1):TAG:F=TEST(X+4,Y-8
):PLOT -5,-5,F:MOVE X,Y:PRINT CHR$(143);
:RETURN
320 :
330 SP=SP+1:IF SP=6 THEN SP=1
340 TAGOFF:LOCATE 2,20:PRINT "ICON.";STR
$(SP): PRINT CHR$(23);CHR$(0):WINDOW 1,1
6,1,17:CLS:WINDOW 1,20,1,25
350 t=17:TAGOFF:PRINT:FOR u=16 TO 1 STEP
 -1:LOCATE 1,t::t=t-1:FOR i=1 TO 16 : PE
N q(sp,u,i):PRINT CHR$(143);:NEXT i,u:

360 GOSUB 900:GOSUB 750:PRINT CHR$(23);C
HR$(1):TAG:GOSUB 270
370 PEN 1
380 RETURN
390 :
400 GOSUB 1120:FOR n=1 TO 255:CALL &F81B
:NEXT:TAGOFF:WINDOW 21,39,22,22:INPUT "F
ilename";f$:CLS:WINDOW 1,40,1,25:TAG:IF
f$="" OR LEN(f$)>8 THEN 400
410 GOSUB 1050
420 H=0
430 FOR screen=50260 TO 49300 STEP -240
440 FOR N=0 TO 1:FOR C=0 TO 7:FOR g=0 TO
 3:POKE 30000+H,PEEK(screen+g+(2048*C)+(
N*80)):H=H+1:NEXT g,C,N
450 NEXT
460 SAVE "!"+f$,b,30000,640
470 PAPER 0
480 RETURN
490 :
500 FOR n=1 TO 255:CALL &F81B:NEXT n:TAG
OFF:WINDOW 21,39,22,23:INPUT "Filename";
f$:CLS:WINDOW 1,40,1,25:TAG:IF f$="" OR
LEN(f$)>8 THEN 500
510 GOSUB 1050
520 PAPER 0
530 MEMORY 29999:LOAD "!"+f$,30000
540 H=0
550 FOR screen=50260 TO 49300 STEP -240
560 FOR N=0 TO 1:FOR C=0 TO 7.FOR g=0 TO
 3:POKE screen+g+(2048*C)+(N*80),PEEK(30
000+H):H=H+1:NEXT g,C,N
570 NEXT
580 FOR n=1 TO 5
590 FOR u=1 TO 16 STEP 1:FOR i=1 TO 16 S
TEP 1:q(n,i,u)=TEST (542+(u*2),144-(i*2)
+(n*48)):NEXT i:NEXT u
600 NEXT n
610 t=17.TAGOFF:PRINT:FOR u=16 TO 1 STEP
```

```
-1:LOCATE 1,t::t=t-1:FOR i=1 TO 16 STEP
1
620 PEN q(sp,u,i):PRINT CHR$(143);:NEXT
i,u
630 PEN 1
640 TAGOFF:PRINT CHR$(23);CHR$(0):GOSUB
660:TAG:GOSUB 270:TAGOFF:PRINT CHR$(23);
CHR$(1):TAG:RETURN
650 :
660 :
670 GOSUB 800
680 PLOT 330,120:DRAW 638,120:DRAW 638,3
88:DRAW 330,388:DRAW 330,120
690 PLOT 1,100:DRAWR 638,0:DRAWR 0,-100:
DRAWR -638,0:DRAWR 0,100
700 PLOT 338,134:DRAWR 170,0:DRAWR 0,248
:DRAWR -170,0:DRAWR 0,-240
710 TAGOFF:LOCATE 23,4:PRINT "M E N U":T
AG
720 RESTORE:TAG:FOR n=20*16 TO 11*16 STEP
 -20:READ a$:MOVE (22*16) 8,n:PRINT a$;
:NEXT:TAGOFF
730 GOSUB 1050
740 TAGOFF
750 FOR n=22 TO 24:PEN 1:LOCATE 3,n:PRIN
T "PEN";n-21;":";:PEN n-21:PRINT STRING$
(3,CHR$(143));:PEN 1:NEXT n:PEN 1
760 LOCATE 2,20:PRINT "ICON.";sp;" PEN."
;col
770 RETURN
780 :
790 :
800 PLOT -5,-5,1:FOR n=126 TO 263+135 ST
EP 16:PLOT 1,n:DRAWR 16*16,0:NEXT n
810 FOR n=1 TO 17*16 STEP 16:PLOT n,128:
DRAWR 0,8*32:NEXT n
820 RETURN
830 :
840 :
850 GOSUB 860
860 COL=1:SP=1:DIM q(5,16,16),m(16,16):x
=160:y=158:a=11:b=15
870 PRINT CHR$(23);CHR$(1)
880 BORDER 13:INK 0,13:INK 1,0:INK 2,4:I
NK 3,19
890 RETURN
900 :
910 :
920 WINDOW 20,39,22,22:CLS
920 WINDOW 20,39,22,22:CLS
930 penn=1:inkk=1
940 FOR n=1 TO 255:CALL &BB18:NEXT:
950 TAGOFF
960 INPUT "PEN NO.";penn
970 IF penn>3 OR PENn<0 THEN 960
980 INPUT "INK no.";inkk
990 IF inkk>26 OR inkk<0 THEN 980
1000 INK penn,inkk
1010 WINDOW 1,40,1,25
1020 TAG
1030 GOSUB 1050
1040 RETURN
1050 TAGOFF:PLOT -5,-5,1:PRINT CHR$(23);
CHR$(0):TAG:FOR n=90 TO 16 STEP -16:MOVE
 19*16,n:PRINT STRING$(20,CHR$(207));:NE
XT:TAGOFF:PRINT CHR$(23);CHR$(1);
1060 PRINT CHR$(22);CHR$(1);
1070 LOCATE 23,21:PRINT "I C O N";
1080 LOCATE 23,23:PRINT "D E S I G N E R
";
1090 PRINT CHR$(22);CHR$(0);
1100 TAG
1110 RETURN
1120 TAGOFF:PLOT -5,-5,1:PRINT CHR$(23);
CHR$(0):TAG::FOR n=90 TO 16 STEP -16:MOV
E 19*16,n:PRINT STRING$(20,CHR$(207));:N
EXT:TAGOFF:PRINT CHR$(23);CHR$(1);:TAG:R
ETURN
1130 DATA f1. Next,f2..Erase,f3. Pen,f4.
.Inks,f5..Save,f6..Load,f7..Mirror,f8 .I
nv
1140 FOR n=1 TO 16:FOR i=1 TO 16:m(n,i)=
q(sp,n,i):NEXT i,N
1150 FOR N=1 TO 16
1160 z=17
1170 FOR I=1 TO 16 STEP 1
1180 z=z-1
1190 m(n,i)=q(sp,n,z)
1200 NEXT
1210 NEXT
1220 FOR n=1 TO 16 :FOR i=1 TO 16 STEP 1
:q(sp,n,i)=m(n,i):NEXT I,N
1230 t=17:TAGOFF:PRINT:FOR u=16 TO 1 STE
P -1:LOCATE 1,t::t=t-1:FOR i=1 TO 16 STE
P 1 : PEN q(sp,u,i):PRINT CHR$(143);:NEX
T i:PRINT " ";:NEXT u:PEN 1:
1240 LOCATE 1,1:PRINT "
";
1250 GOSUB 800:GOSUB 750:TAG:GOSUB 270
1260 TAGOFF:PRINT CHR$(23);CHR$(0);
1270 FOR u=1 TO 16 STEP 1:FOR i=1 TO 16
STEP 1:PLOT 542+(u*2),144-(i*2)+(sp*48),
q(sp,i,u):NEXT i:NEXT u
1280 PRINT CHR$(23);CHR$(1);:TAG
1290 RETURN
1300 FOR n=1 TO 16
1310 FOR i=1 TO 16
1320 IF q(sp,n,i)=0 THEN q(sp,n,i)=1 ELS
E q(sp,n,i)=0
1330 NEXT i,n
1340 t=17:TAGOFF:PRINT:FOR u=16 TO 1 STE
P -1:LOCATE 1,t::t=t-1:FOR i=1 TO 16 STE
P 1 : PEN q(sp,u,i):PRINT CHR$(143);:NEX
T i:PRINT " ";:NEXT u:PEN 1:
1350 LOCATE 1,1:PRINT "
";
1360 GOSUB 800:GOSUB 750:TAG:GOSUB 270
1370 TAGOFF:PRINT CHR$(23);CHR$(0);
1380 FOR u=1 TO 16 STEP 1:FOR i=1 TO 16
STEP 1:PLOT 542+(u*2),144-(i*2)+(sp*48),
q(sp,i,u):NEXT i:NEXT u
1390 PRINT CHR$(23);CHR$(1);:TAG
1400 RETURN
```

Magic Maze

Mark Weatherill

Magic Mazes is an arcade game spread over 12 screens each of which contains a number of items which you need to collect to finish the game. It's not that easy though as some screens are guarded by ferocious creatures which will drain your life energy.

Disc users will need to set *Page* to &1200 before typing in the longer listings and indeed running the program. Next week sees the final instalment of the listings.

If you can't bear the wait then send £2.00 (cassette) to 18 Kingsland, Aylesbury, Bucks HP21 9SY.

```
2650 mosho INX.CPX#11 BNE olop:RTS
2660.mv STXx STYy
2670LDX#0
2680JSRpeeks
2690LDAx:CMP#1 BNE llf
2700LDAr.BNE llf JSR GR
2710.llf LDAx:CMP#255 BNE lup
2720LDA l BNE lup JSR GL
2730 lup LDAy:CMP#255 BNE tdn
2740LDA u.BNE tdn JSR GU
2750 tdn LDAy.CMP#1 BNE ttl
2760LDA d BNE ttl JSR GR
2770.ttl RTS
2780
2790 keys LDY#0
2800DEC k: LDAk1:BNE ttl
2810INCkc LDAkc CMP#4.BNE msk
2820LDA#1:STAkc. msk
2830LDA#6:STAk1
2840.mikc
2850LDA#17 JSR&FFEE LDAkc JSR&FFEE
2860LDA&40C.STAkx LDA&400 STAkx+1
2870LDA&410 STAky LDA&411 STAky+1
2880 klop LDA(kx),Y CMP#255 BEQ nek
2890LDA#31 JSR&FFEE:LDA(kx),Y JSR&FFEE
LDA(ky),Y JSR&FFEE.LDA#228 JSR&FFEE
2900 nek INY.CPY#5.BNEklop RTS
2910 hitk LDY#0
2920LDA&40C STAkx LDA&400:STAkx+1
2930LDA&410:STAky:LDA&411 STAky+1
2940.hklp
2950LDA(kx),Y CMP#255.BEQ nokk
2960CLC ROLA.STAx
2970LDA(ky),Y:STAy DECy
2980LDXx.CPX NX%.BEQ zkok
2990INX:INX:CPX NX%.BEQ zkok
3000LDXx:DEX DEX CPX NX%.BEQ zkok
3010 nokk INY CPY#5.BNE hklp RTS
3020 zkok LDA NY% CMP y BEQ gotk
3030DECy LDA NY% CMP y.BEQ gotk
3040INCy:INCy.INCy:LDA NY% CMP y BEQ go
tk
3050JMPnokk
3060 gotk LDA#31 JSR&FFEE LDA(kx),Y JSR
&FFEE LDA (ky),Y JSR&FFEE LDA#32 JSR&FF
E:LDA#255:STA(kx),Y STA&420 DEC&42C RTS
3070]:NEXT P% &480 = &900 1OPT2
3080 sdat EQUW &900 EQUW &920.EQUW &940
:EQUW &960
3090EQUW &980 EQUW &9A0 EQUW &9C0.EQUW
&9E0:EQUW &A00:EQUW &9F0:EQUW &A38:EQUW
&A58
3100] ENDPROC
3110DEFPROCLOAD
3120*LOAD alldata 4000
3130*LOAD sprdata 900
3140*LOAD objdata 5600
3150ENDPROC
3160DEFPROCTX(x%,y%,M$)
3170x% 32*x% y% 1024 32*y%
3180FOR L%=1 TO LENM$ ?&70 ASC MID$(M$,
L%)
3190VDU23,250
3200A% 10 X%=&70:Y% 0 CALL&FFF1
3210FOR Y% 1 TO 8 C% (Y%?&70)AND&5A:VDU
C% NEXT
3220VDU23,251
3230FOR Y% 1 TO 8 C%=(Y%?&70)AND&A5 VDU
C%:NEXT
3240VDU5
3250GCOL0,3 MOVE x% y% VDU250
3260GCOL0,1 MOVE x%,y%:VDU251
3270x%=x%+64
3280NEXT:VDU4 ENDPROC
3290 IFERR 17 RUN
3300 REPORT PRINT;" at line ";ERL
>
   10REM MAGIC MAZE by M Weatherill
   20REM ** Listing 2 **
   30REM SCREEN/SPRITE DATA
   40REM SCREEN DATA &4000   &4EFF
   50REM SPRITE DATA &4F00   &5100
   60REM peke and save as block at RAM
   70 HIMEM=&5000
   80 RESTORE:C%=0
   90 FORQ%=0 TO &1100
  100 READ Z% C%=C%+Z%
  110 Q%?&5000=Z%:NEXT
  120 IFC%<>&42706 PRINT"ERROR IN DATA":
END
  130 PRINT"Ready to save ALLDATA" REPEA
TUNTILGET
  140 *SAVE alldata 5000 6100 4000 4000
  150REM save from &5000+ but make it re
load at &4000+
  160 END
  170 DATA 224,224,224,224,224,224,224,2
24,0,224,224,224,224,224,224,224,224,0,0
,0,0,0,0,0
  180 DATA 0,0,0,0,0,0,0,224,224,0,0,0,0
,0,0,0,0,0,0,0,0,0,0,0,224
  190 DATA 224,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,224,224,0,0,0,0,0,0,0,0
  200 DATA 0,0,0,0,0,0,0,224,224,229,0,2
26,229,226,228,0,228,226,228,226,0,0,225
,225
  210 DATA 224,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,0,224,0,0,0,0,0,0,0
  220 DATA 0,0,0,0,0,0,0,0,224,0,0,0,0,0
,0,0,0,228,229,0,0,225,225,225
  230 DATA 224,228,229,226,229,226,229,0
,0,0,0,0,0,0,0,0,224,0,0,0,0,0,0,0
  240 DATA 0,0,0,0,0,0,0,0,224,0,0,0,0,0
,0,0,228,229,0,0,225,225,225,225
  250 DATA 224,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,0,224,224,224,0,0,0,0,0
  260 DATA 0,0,0,0,0,0,0,0,224,0,224,0,0
,0,229,0,0,0,0,225,225,225,225,225
  270 DATA 224,0,224,224,224,0,0,0,0,0,0
,0,0,0,0,0,224,0,0,0,0,0,0,0
  280 DATA 0,0,0,0,0,0,0,0,224,0,0,0,0,0
,0,0,0,0,0,0,0,0,0,0
  290 DATA 224,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,0,84,104,101,224,83,116,97,114
  300 DATA 116,224,224,224,224,224,224,2
24,229,229,229,229,229,229,229,229,229,2
29,229,229,229,229,228,228
  310 DATA 229,0,229,0,229,0,229,0,229,0
,0,0,0,0,0,229,229,0,224,0,228,0,229,0
  320 DATA 229,0,0,0,0,0,0,229,229,0,0,0
,229,0,229,0,229,0,0,0,0,0,0,229
  330 DATA 229,0,0,0,229,0,229,0,229,0,0
,0,0,0,0,228,228,0,0,0,0,0,229,0
  340 DATA 229,0,0,0,0,0,0,229,0,0,0,0,0
,0,228,0,228,0,0,0,0,0,0,0
  350 DATA 0,0,0,0,0,0,0,0,229,229,229,0
,0,0,0,0,229,0,0,230,0,230,0,0
  360 DATA 0,0,229,229,0,0,0,0,0,0,0,0,0
,0,0,0,0,0,0,228,228,0,0,0
  370 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,228,228,0,0,0,0,0,0
  380 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,0,0,0,0,0,0,229,229
  390 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,229,0,0,0,0,0,0,0
  400 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
,0,0,0,0,0,0,0,0,0
  410 DATA 0,0,0,0,0,0,0,0,0,0,0,0,229,0
,0,0,0,230,0,230,0,230,0,230
  420 DATA 0,0,0,228,229,228,0,0,0,230,0
,230,0,230,0,230,0,0,229,228,229,229,228
,0
  430 DATA 224,224,224,224,224,224,66,11
1,117,110,99,101,114,115,224,224,224,224
,224,224,224,224,224,224
  440 DATA 224,224,224,224,224,224,224,2
24,224,0,0,0,0,0,0,0,0,0,0,0,0,0,0,224
  450 DATA 0,224,0,0,0,0,0,0,0,0,0,0,0,0
,224,0,0,0,224,0,0,0,0,0
```

Fail Safe

Keith Irving

This interrupt driven Spectrum routine provides a secondary break facility for those machine code programmers that find their code trapped in an endless loop. Turn it on with *RANDOMIZE USR 65000* and off with *RANDOMIZE 65010*.

To break out of a program press *Symbol Shift* and *Break* together to return to Basic.

```
10 REM POKE "FAIL-SAFE" CODE INTO MEMORY
20 CLEAR 64999
30 FOR N=65000 TO 65000+69
40 READ X: POKE N,X: NEXT N
50 DATA 62, 253, 237, 71, 237, 94, 201, 0, 0, 0, 62, 63, 237,
        71, 237, 86, 201, 0, 0, 0, 0, 0, 0, 6, 254, 0, 0, 0, 0,
        0, 229, 213, 197, 245, 255, 243, 62, 127, 219, 254,
        230, 3, 40, 7, 241, 193, 209, 225, 251, 237, 77, 241,
        193, 209, 225, 251, 1, 0, 128, 11, 120, 177, 32, 251,
        17, 190, 20, 195, 153, 18
60 REM SAVE THE 70 BYTES OF CODE FROM ADDRESS 65000 ONWARDS
70 REM RELOAD WITH "CLEAR 64999: LOAD "name"CODE 65000
80 REM INTERRUPT ON = RANDOMIZE USR 65000
90 REM INTERRUPT OFF = RANDOMIZE USR 65010
100 REM TO CALL THE ROUTINE PRESS SYMBOL SHIFT+BREAK
```

Sound Sampler

Keith Irving

This Spectrum program lets you sample sound for up to four seconds. Sampled speech is reasonably intelligible but could be greatly improved by the use of an external filter.

Press *R* to record the sample and *P* to play it back again.

```
10 REM POKE "SAMPLER" CODE INTO MEMORY
20 CLEAR 64799
30 FOR N=65000 TO 65000+67
40 READ X: POKE N,X: NEXT N
50 DATA 33, 232, 129, 14, 253, 243, 6, 9, 219, 254, 7, 7, 203,
        18, 16, 248, 0, 0, 0, 0, 114, 35, 124, 183, 194, 238,
        253, 251, 201, 0, 33, 232, 129, 14, 253, 53, 72, 92,
        15, 15, 15, 230, 7, 95, 243, 126, 15, 15, 15, 87, 6, 8,
        122, 179, 211, 254, 203, 10, 16, 248, 35, 124, 135,
        194, 21, 254, 251, 201
60 POKE 23658,8: CLS
70 PRINT FLASH 1:AT 11,6:"PRESS":FLASH 0;"R TO RECORD"
80 PRINT AT 13,12;"P TO PLAY BACK"
90 IF INKEY$="R" THEN PRINT FLASH 1;AT 11,12;"R": RANDOMIZE USR
   65000: GO TO 70
100 IF INKEY$<>"P" THEN GO TO 70
110 PRINT FLASH 1;AT 13,12;"F": RANDOMIZE USR 65030: GO TO 70
```

Selective Copy

Adrian Short

This routine for the Spectrum and any ZX Printer compatible emulates the COPY command except that it allows you to copy any part of the screen.

When reloading the routine use *CLEAR 61135* first. To use the routine enter *POKE 61137, top line, POKE 61139, number of lines* and then *RAND USR 61136* to perform the copy.

```
  10 REM SELECTIVE COPY
  20 REM E  A.SHORT 14/4 87
  30 CLEAR 61135
  40 FOR A=61136 TO 61182
  50 READ V: POKE A,V
  60 NEXT A
  70 SAVE "SELCOPY"CODE 61136,47
  80 DATA 38,0,46,24,229,124,205
,158,14,205
  90 DATA 227,208,225,36,45,200
195,212,238,62
 100 DATA 2,17,0,91,1,32,0,245,2
37,176
 110 DATA 213,17,224,0,25,209,24
1,61,254,0
 120 DATA 194,232,238,205,205,14
,201
```

COMPUNET TO MOVE TO NEW MAINFRAME

Compunet is always changing and adding new areas of interest to subscribers Now, as Graham Edkins reports, they are preparing for their biggest change yet

Compunet could never be accused of being a static network and from the very beginning it has been adding new ideas The fact that the access software can be changed so easily by a simple automatic download of the latest code makes any innovations that much easier to implement

Compunet is now working on its biggest change yet moving to a new mainframe which means that the latest ideas are having to wait their turn However the new mainframe is still on schedule (unusual in the computer world) for its summer launch

As the users can create their own directories and make their own new areas the work on the new mainframe has not affected the growth of information special interest groups (SIGS) or programs available In fact Compunet seems to have grown every time that you log-on so it is easy to get used to one particular area or even a few areas and miss the changes going on in others

Routes to others are given at the bottom of each directory to encourage you to jump to a different maybe unexplored part of the network with the touch of a function key Alpha gotos similar to those which Prestel has just introduced also make it easy to move around from one area to another and avoid the long slog through directory after directory

Even with such ease of movement it's very tempting to settle down into a set pattern so I decided to take a good look around and see what's happening In my next report on Compunet I'll tell you what I found in the Demos area where I'll concentrate on the ones that are not to be missed This time however we'll look at some of the areas on the rest of system many of which are new to me although many are old friends which deserve another look

I would guess that most people start their on-line session by hitting GOTO in the duckshot and typing NEWS This is where the editor of Compunet writes about the latest new pages to see Many of these have been given quite a short life by the person that uploaded them and so the news itself only remains for a couple of weeks at the most and there is normally an updated news two or three times every week

It is very difficult for the editor to see every news upload so if you feel that your latest masterpiece deserves a mention then drop a line to him in the ID FEEDBACK

If you like your news to be about micros, hardware software and computer gadgets then the place to look is the large (and growing) directory from JMT1 It goes by the unusual title of The Electric Frog Plate but GOTO FROG will take you straight there

Amateur Radio enthusiasts have their needs catered for in the RADIO area this is a Closed User Group but a small one off payment allows you entry to this area started by G4PYR Aviation news can be found in AVCOM and other news alpha gotos like MAGS and COMMS are also available You'll probably find an area covering just about every minority or for that matter majority interest that you could think of but if you don't then you can always start one!

If you prefer to be entertained instead of educated then there are a couple of other new gotos to try VICAR will lead to the Vicar's Trainset from RSB3 while JT12 and others are very prolific in Shockwave (GOTO SHOCK) Further entertainment with a science fiction edge to a lot of it is in COSMOS where you will find well developed areas like Hitch Hikers Astronomy and Dr Who (GOTO HHG ASTRO & WHO)

Over in the Labyrinth Dr There is everything to do with role playing games the multi user game MUD of course and VALLEY which is a small section of MUD which can be used on weekend mornings for just 5/1p per hour but you will also find things like the Play by Mail directory (GOTO PBM) and the armoury where Zugger gives instructions for making a mace a sword or an axe! As the word labyrinth is too long for a keyword they have given it the goto CAVES

There are many places to look on the system apart from NEWS to find the latest uploads try GOTOS which is a list of page adverts or the chat-line area (GOTO CHAT) where many of our putters promote their uploads INDEX gives you a good starting point for an escape around the network and also lists many of the Alpha Gotos

If all of this travelling around what has in effect become a very large database considering that it is currently dedicated to only one machine has proved too much for you then I would recommend settling down to a good and thought provoking read in the Arena area (GOTO ARENA) where other callers have so far given their views on such controversial topics as religion the Channel Tunnel women in computing AIDS education and South Africa You may well find yourself duty bound to express your own opinion by uploading into its directories!

I hope that there has been something mentioned on this page that will in the future be added to your own list of calling places If you can't wait until the next Compunet article to tell you about the demos for which Compunet has become so well known then I'll direct you to Demo Reviews on Page 222306 and KKY TV Demo World on Page 224724

2-Bit drumkit for the ST

2-Bit Systems released a drum package for Atari 8-bit micros some time ago. Now it has revised that package to work with the ST. Mark Jenkins looks it over

A few months ago we looked at 2-Bit Systems' drum package for the Atari 8-bit micros. Now the company has modified the package to work with the ST and has taken the opportunity to launch several options for different musical applications.

2-Bit has also thrown in its lot with Microdeal, which will be distributing the ST Digidrum both here and in the States. No doubt this will give the company much wider exposure, which is bound to be a good thing.

The subtly coloured Digidrum box (it's bright purple actually, you can't miss it) contains just one disc and a handbook, and the optional Sample Disc 1 has a leaflet listing the sounds contained thereon. There are 41 sounds included, which for the sake of completeness we list below.

1 Bcash	15 Ehihat	29 Orch 2
2 Cellos	16 Ehitom	30 Sax 1
3 Choir	17 Elephant	31 Sax 2
4 Clave	18 Elotom	32 Sax 3
5 Coconut	19 Epeow	33 Sax 4
6 Computer	20 Esnare	34 Softbass
7 Cork	21 Hiconga	35 Stick
8 Cowz	22 Hisnare	36 Tambour
9 Cuiro	23 Indian	37 Timpani
10 Dogyap	24 Loconga	38 Transpor
11 Ebass	25 Machgun	39 Trunk
12 Eclap	26 Majorgan	40 Whistle
13 Eclaps	27 Monster	41 Glass
14 Ecymbal	28 Orch 1	

You can arrange these sounds into two complete kits – for instance using all the E prefixed sounds to create a Simmons-like electronic kit, or using the trunk, bcash, congas, clave and so on to create a Latin kit.

A total of 16 sounds can be loaded and there are several sounds on the main disc to start you off. Incidentally, you can run the program on a 520ST or 1040ST with a colour or monochrome monitor or TV (in the case of the 520STFM).

The instruction handbook is a little on the concise side (in fact it's just four sides long) and is a bit imprecise in some areas. For instance, it's not strictly true that Digidrum will "turn your Atari ST into a high quality sampling drum machine".

You can't do any sampling yourself – you need the optional Replay sampling system, which has been used to create the sounds supplied, sampling at around 20KHz.

The default kit on the main disc consists of bass, snare, open and closed hi-hat, cowbell, lo and high tom, low and high bongo and clap. 99 patterns can be stored and these can have between 4 and 32 beats; patterns can be entered in step time or real time and linked together to produce a song of up to 70 patterns.

To increase the possible length of a song you can also repeat a single pattern within the song or loop a whole sequence, and of course *everything* can be saved to disc.

If [illegible] use the ST Replay cartridge [illegible] its phono out socket to [illegible] otherwise you're limited to [illegible] samples via your monitor. If you auto run [illegible]rum PRG you'll hear a demo song and you can use the alternate key to select monitor or hi-fi (via the Replay cartridge) sound output.

The package doesn't use much of the Gem environment and in fact works without a mouse. The cursor arrow keys are used to move along the top of the screen options, which are speed, tempo, edit song, play song, edit pattern, load, save and info, the last of these simply repeating some of the specification from the handbook.

Some of the terminology in the other options is very poorly chosen. What 2-Bit chooses to call "speed" is actually sampling rate, which can be set to 20KHz for the highest quality or 10KHz for the longest time. All samples are described as being 16KHz in length – perhaps this means 16KB?

When we do get on to what you and I might call speed – or Tempo if you like – we find that 2-Bit has made it variable from one to 49. But is 49 faster or slower than one? Well, logically enough (?) it's slower – the logic being that the tempo setting indicates the number of 50Hz counts taken between beats.

Edit song is a slightly more sensible option, calling up a long list of 70 patterns together with the number of times they should be repeated and a suitable tempo. Figures are entered using the numeric keys and you have to go along a whole line once you've reached it using the cursor keys – in other words, you have to enter the pattern number again even if you only want to change the number of times it repeats.

You can wipe a complete song using the edit song menu and have the same option on the pattern menu. Patterns are entered on a grid offering any 16 sounds matrixed against up to 16 beats. The Digidrum package can sound two voices simultaneously and these must have samples assigned to them as voice one and voice two; if you attempt to play the same channel twice then the first entry will be deleted.

Granted, the demos do show that you can come up with quite complex patterns using just two voices. If you prefer to enter beats in real time, just go to the real time option and you can enter beats by tapping F1 (for whatever sound is currently assigned to voice one) and F2 (for voice two).

You can load and save a voice, a kit of voices, a pattern or a song, so the method of assigning sounds to songs is quite flexible. There are a few disc error messages, mainly dedicated to announcing the fact that your disc is full, 16 samples taking 260K of disc space.

During playback the package sounds pretty good and you can create long and complex songs quite quickly with reasonably bright, crisp sounds. However, I'd be very surprised if there were any musicians on the 2-Bit team – the tempo assignment, method of pattern entry into songs, lack of pitch control for the tuned sounds, neglect of the mouse and inaccuracy of the handbook are all regrettably unprofessional.

Digidrum costs £19.95 and Sample Disc 1 costs £14.95; more information from Microdeal at the address below.

Microdeal UK, PO Box 68, St Austell, Cornwall PL25 4YB. 0726 68020

If you have any queries or tips for this column, please write to Mark Jenkins at *Popular Computing Weekly*, 12–13 Little Newport Street, London WC2H 7PP. Mark would also welcome examples of your own music on audio or program tape or disc.

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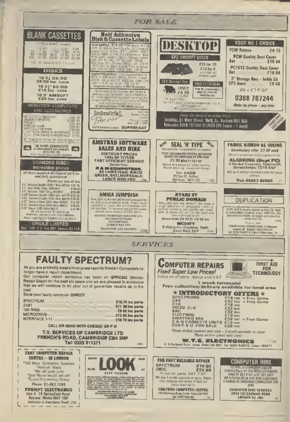
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NEW RELEASES

Amstrad CPC

Program *Five Star Games* **Type** Compilation **Price** £9.95 **Supplier** Beau Jolly 29A Bell Street Reigate Surrey RH2 7AD

Dandy Cauldron II and *Alien Highway* star with *Doomsday Blues* and *Frostbyte* as curios

Dandy you might remember is Electric Dreams answer to US Gold's *Gauntlet* programmed by Ram Jam

Played in a maze of dungeons filled with monsters monster generators food doors keys the game had distinctive mono graphics – rather gothic in nature if anything. One or simultaneous two player it was considered a good quality hack

Alien Highway is a variation of the original *Highway Encounter* from Vortex. It played on roughly the same themes and stuck to the same style of graphics but was a worthy follow up requiring sharp arcade skills and a keen brain to succeed

Cauldron II is another follow up but was very different from Palace's original in this you play the part of a bouncing pumpkin out to topple the very witch you controlled in *Cauldron I*. The witch's palace (where the action takes place) is big all full of hazards natch. Not at all bad

Frostbyte is a game released when Mikro-Gen was going through its mid life crisis so didn't sell too well – a shame because it's the first ever arcade adventure to feature in the starring role a Sinky (At least it looks like a Sinky)

Lastly *Doomsday Blues* from French company Ere Informatique. This is a weird arcade adventure that has you breaking out from prison and zipping round the environs. It's quirky visually attractive and very French

Altogether the five pack represents excellent value especially considering that none of the games are over a year or so old

It's interesting how taking a sideways look a particular game format and just changing one single aspect it can make such a difference to the gameplay

Jasdan Joerges has taken the simple arcade adventure/maze game – and played around with the gravity and friction aspects of the movement with Kinetik. As your hydro craft moves from screen to screen (there are 43 'zones' in total), instead of the constant downward pull of gravity that dominates in most games, gravity and friction vary in each room

In one room, for instance, there are two centres of gravity – one placed on the left of the scrven, one on the right – which makes manoeuvring kind of difficult. In others, intense atmospheric friction means that moving is like making your way through treacle.

It is your mission to sort out this abnormal state of affairs by collecting the three letters that spell out the 'word of peace' (the mind boggles!) and then delivering them into the hands of the great kinemator – wherever it may be – who will put things to rights

As in most games of this type, things may be picked up and used to aid you – like a chemical spray that will blast away all the nasties a deflector shield that will fend them off and best of all the EZ control thrusters that will nullify the weird effects of the strange gravity

You've got three lives – and as soon as your power gauge goes down to zero, that's one life gone. Some static objects will kill at the slightest contact though – so a deft touch with the joystick is essential

Released on the full price Firebird label, written by lone West German programmer Jasdan Joerges (aided only by a 48K Spectrum, would you believe), out on Spectrum, Amstrad CPC and Commodore 64

Kinetik is not a classic – but if you like this kind of arcade puzzle solving, it offers enough that is new to make it worth buying

John Cook

Program *Wonderword* **Type** Application **Price** £7.50 (tape) £9.00 (disc) **Supplier** Bit & Byte Software Moneymore Cranmore Co Galway Ireland

Homebrew WYSIWYG wordprocessor for the CPC with a Light Cycle game on the flip side

Program *Krakout* **Type** Arcade **Price** £8.95 **Supplier** Gremlin Graphics Alpha House 10 Carver Street Sheffield S1 1FS

Another Breakout Arkanoid variant. It's good and another fiver will get you the Construction Kit if you ever manage to solve the 100 screens

Program *Mario Brothers* **Type** Arcade **Price** £8.95 (tape) £14.95 (disc) **Supplier** Ocean Software 6 Central Street Manchester M2 5NS

Atari ST

Program *Xevious* **Type** Arcade **Price** £24.95 **Supplier** US Gold Units 2/3 Holford Way Holford Birmingham B6 7AX

A very disappointing conversion to the ST. The colours are insipid and dull and control is via joystick only whereas a five star job would have used mouse control with separate mouse buttons for bomb and fire

Program *Mousetrap* **Type** Arcade **Price** £14.95 **Supplier** Tynesoft Addison Industrial Estate Blaydon upon Tyne Tyne & Wear NE21 4TE

Platforms and Ladders on the ST but it's a lovely implementation with some great touches of humour as you move your mousey character from screen to screen. Completely charming and it's not costing an arm and a leg

Atari XL/XE

Program *Wizard's Crown* **Type** Arcade Adventure **Price** £00.00 **Supplier** US Gold Units 2/3 Holford Way Holford Birmingham B6 7AX

Atari XL/XE disc based role playing adventure from SSI which includes a tactical combat section so the party can really get to grips with the monsters

BBC B

Program *Computer Mind* **Type** Strategy **Price** £9.00 (disc only mail order) **Supplier** Mosaic Software 4/15 The Grange London SW19 4PS

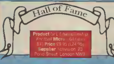
Two way Mastermind style game with you against the computer

Commodore 64

Program *Samurai Trilogy* **Type** Arcade **Price** £9.95 **Supplier** Gremlin Graphics Alpha House 10 Carver Street Sheffield

continued on page 51 ▶





Product GFL Championship Football **Micro** 64 [illegible] ST) **Price** £9.95 (£24.95) **Supplier** Activision 23 Pond Street London NW3



10-HUT!

A[illegible] has timed the re[illegible]lease of Gamestar's GFL Championship Football [illegible] perfect[illegible]. Perfectly wrong that is. With the Superbowl a fading memory and the new American Football season many months away [illegible] is not running high at the moment. Hopefully this will [illegible] again [illegible] Gamestar's product [illegible] features a style of graph[illegible] seen before in a game of this type.

I speak of a three dimensional view from down on the gridiron. Here you [illegible] play the wide receiver and the running back, the man [illegible] the special team going for goal [illegible] running out.

Before you get into the action you must [illegible] through the preliminaries [illegible] the number of players which teams to use (from 28 [illegible] rated [illegible] ently) and how long each quarter should last (four [illegible] en minutes!).

That dispensed [illegible] down to pitch and the k[illegible]. After struggling [illegible] ball you are presented [illegible] fairly long list of option[illegible] first offensive play. The [illegible] of running plays [illegible] draw blast power [illegible] pitch left or right [illegible] draw can usually be [illegible] small gains while [illegible] and pitch options [illegible] can reap greater rewards.

After selecting your [illegible] the opposition makes their [illegible] you get to play it [illegible] quarterback grunt [illegible] intelligibly real sample [illegible] as well and pass [illegible] you. This is the [illegible] truth because you have [illegible] exactly where to run [illegible] through the melee at the line of scrimmage. If you a[illegible] [illegible] at the bottom [illegible] the [illegible] make a big gain [illegible] a broken line [illegible] the [illegible] the defense [illegible] plough [illegible] through the [illegible] then the end zone looms up and the crowd starts cheering.

The alternative [illegible] play [illegible] the bar. There [illegible] break [illegible] first grunting and then [illegible] precise number of steps [illegible] A long wel left for example requires [illegible] steps forward [illegible] the left and one back. It has [illegible] right and all the right ones [illegible] wise when the quarterback throws the ball [illegible] there to meet it. Oh that it were that simple. You also have the defense [illegible].

While the graphics [illegible] chunky they are [illegible] in a clear [illegible] animation [illegible]. The sound though [illegible] pretty good with the sampled [illegible] of the quarterback and [illegible] atmosphere.

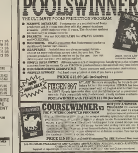
With a [illegible] play against [illegible] Championship [illegible] you play [illegible] until [illegible] really does [illegible].

> "Having broken free you can stomp down the field – sticking out an arm if you time it right to fend off the desperate tackles. Should you manage to plough your way through the defense then the end zone looms up and the crowd starts cheering"

Hints box

- Until you know the plays [illegible] off by heart, try [illegible] – boll most of the time
- The shorter passes are [illegible] to use so don't try a long [illegible] until you really need it
- Try to outthink your opponent by working out what [illegible] vious moves [illegible] and what the response would be. Then try something different that [illegible] advantage of the [illegible]
- Concentrate on [illegible] running plays [illegible] that [illegible] scrambling after the quarterback [illegible]
- [illegible] learn [illegible] most of the time

Duncan Evans



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ST
Update
SET FOR TAKE-OFF
ST flight simulators

◀ continued from page 49

Impressive graphics in the multi-load bash which has you taking various tests in order to become a Samurai Warlord. Three sections are Karate, Samurai sword play and Kendo. Looks good.



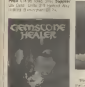
Program *Zap Pak* **Type** Arcade Compilation **Price** £4.95 (disc only) **Supplier** Players, Mercury House, Calleva Park, Aldermaston, Berks RG7 4QW

Budget disc software from Players – just under a fiver for two games. The two on the Commodore disc are *Fruity* and *Fungus* – neither state-of-the-art, but you might like to give it a try.

Program *Twin Tornado* **Type** Arcade Flight Simulator **Price** £9.95 (tape) £11.95 (disc) **Supplier** Durell Soft Simulations, PO Box 66, East Preston, West Sussex BN16 2TX

Simulator that lets you link two Commodores together – giving full two player with independent views of the action.

Program *Gemstone Healer* **Type** Role Playing Arcade Adventure **Price** £14.95 (disc only) **Supplier** US Gold, Units 2/3 Holford Way, Holford, Birmingham B6 7AX



SSI import that takes the *Hall of Things* type concept to the limit.

Program *Pass Your Driving Test* **Type** Application **Price** £8.95 (tape) £11.95 (disc) **Supplier** Audiogenic Software, PO Box 88, 34-36 Crown Street, Reading, Berks

Learning program based on the book *Are you ready for your Driving Test* by Mike Nathenson – a sequel to the best selling. Then please start your engine and turn left at the lights.

Program *Rings of Zilfin* **Type** Role Playing Arcade Adventure **Price** £9.95 (disc only) **Supplier** US Gold, Units 2/3 Holford Way, Holford, Birmingham B6 7AX

Huge quest for mystic rings – looks like it has tremendous depth but don't expect to be knocked out by the graphics.

Program *Shard of Spring* **Type** Role Playing Arcade Adventure **Price** £9.95 (disc only) **Supplier** US Gold, Units 2/3 Holford Way, Holford, Birmingham B6 7AX

Party based role-playing with lots of combat all involved in a sacred quest.

All this newly arrived SSI stuff ain't bad, but it was generally agreed that *The Bard's Tale* (Electronic Arts) is still the best RPG system on the 64.

Program *Five Computer Hits* **Type** Compilation **Price** £6.95 **Supplier** Beau Jolly, 29A Bell Street, Reigate, Surrey RH2 7AD

Hmmmm I didn't know *Kettle* ever was a hit.

Program *Rogue Trooper* **Type** Arcade **Price** £9.95 (tape) £14.95 (disc) **Supplier** Piranha, 4 Little Essex Street, London WC2R 3LF

The gen-u-ine 2000AD legend... the... the Commodore 64 at last.

Program *Mario Brothers* **Type** Arcade **Price** £8.95 (tape) £12.95 (disc) **Supplier** Ocean Software, 6 Central Street, Manchester M2 5NS

Four-op conversion of a Nintendo game of 1984 vintage. It involves platforms and turtles. You knock out the turtles then kick them. Crabs and Fighter Flys also make an appearance.

OK if you like that sort of thing.

PC and Compatibles

Program *The Fourth Protocol* **Type** Strategy **Price** £19.99 **Supplier** Arcolsoft, 68 Long Acre, Covent Garden, London WC2E 9JH

Conversion of the innovative three part strategy icon driven adventure based on the Forsyth best seller.

You play the part of John Preston from MI5 with the task of tracking down a group of Russian agents

"They said it couldn't be done – but we did it." So said one Richard Kaye of Software Creations, one of the up and coming newer software outfits, with the broadest of grins on his face. Richard is a happy man, and playing *Sentinel* on the Spectrum, you can see why.

The thing has been done by Software Creations as well as it possibly could have been on that format and has given thousands of Spectrum owners the chance to experience what the computer press in general have been raving about since last autumn, when the BBC version was released.

In case you missed any one of the several rave reviews in *Popular* (tut, tut), *Sentinel* is an abstract game of conflict set in a *Marble Madness* style environment – but instead of looking on from outside the landscape, you are dramatically placed right inside it. Your opponent is a figure placed on a plinth high above the stark surroundings – the sentinel.

The game is all about energy. Your ultimate task on each level (and there are 10,000, yes, ten thousand) is to destroy the sentinel by absorbing its energy. To do this, you must find a way to get higher than it. To do that, you have to create stacks of boulders (costing you two energy points each), then create a new robot 'being' and transfer yourself into it.

You now absorb your old self (gaining three), and look for trees to absorb (plus one) to replenish your energy supplies to make your next move. All the time this going on, the sentinel is slowly rotating like a deadly lighthouse, draining energy from you if you should fall within its gaze. Get the idea?

With a single sentinel, it's a stimulating exercise in three dimensional visualisation, when there are six – it's blind panic.

Of the four existing versions, Amstrad CPC is probably the best, but the mono display on the Spectrum (and you can change that colour at will) is pleasing enough and well drawn.

In all, it's a great little implementation of Geoff Crammond's original – highly recommended for anyone that's finding the jumpy-jumpy, shooty-shooty a little bit tedious.

John Cook

continued on page 53 ▶

NEW RELEASES

◀ continued from page 51

who plan to detonate a nuclear device in mainland Britain

I lent it to a friend and was bombarded with phone calls for the next week. Conclusion: it's addictive.

Spectrum

Program *Army Moves* **Type** Arcade **Price** £7.95 **Supplier** Imagine Software 6 Central Street Manchester M2 5NS



Program *Chimera* **Type** Arcade Adventure **Price** £1.99 **Supplier** Firebird Silver 74 New Oxford Street London WC1

3D perspective arcade adventure – not bad for under two quid.

Program *Pass Your Driving Test* **Type** Application **Price** £7.95 **Supplier** Audiogenic Software PO Box 88 34-36 Crown Street Reading Berks

See Commodore 64 listing for comment.

Program *Think* **Type** Strategy **Price** £1.99 **Supplier** Firebird Silver 74 New Oxford Street London WC1



Old Ariolasoft title [illegible] already got it but immediately [illegible]. It's a very clever [illegible] Connect 4 and will stretch the brain without stretching the pocket. Go.

Program *Yankee* **Type** Strategy **Price** £9.95 **Supplier** CCS 14 Langton Way Blackheath London SE3 7TL

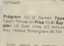
Two battles from the American Civil War: Gettysburg and Chickamauga. Uses the recently developed Corps Commander system and hidden movement. What more do you want from a wargame?

Program *Red Scorpion* **Type** Arcade **Price** £8.95 **Supplier** Quicksilva Argus Press Software Victory House Leicester Place London WC2H 7NB

Vector graphics shooter with a considerable number of frills. The Red Scorpion is the code name for your Multi Role Infantry Combat Capsule – and as a Terran Star Commando you have to take out the evil aliens, collect the goodies and buy fast food.

Looks OK but I've seen smoother.

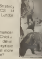
Program *Mario Brothers* **Type** Arcade **Price** £7.95 **Supplier** Ocean Software 6 Central Street Manchester M2 5NS



See Commodore [illegible] for comment.

Program *World Games* **Type** Sports Simulation **Price** £9.95 **Supplier** US Gold Units 2/3 Holford Way Holford Birmingham B6 7AX

Eight sports to compete in around the world with lots of local colour: Weightlifting in Russia, Sumo Wrestling in Japan, Cliff Diving in Mexico etc.



Program *Five Star Games* **Type** Compilation **Price** £9.95 **Supplier** Beau Jolly 29A Bell Street Reigate Surrey RH2 7AD

Includes *Quazatron*, *Alien Highway* and *Cauldron II*: three very classy titles.

Quazatron was always a particular favourite of mine, written by Steve Turner – with a little inspiration from his partner in crime, ace 64 programmer Andrew Braybrook. In fact *Quazatron* is a 3D version of *Paradroid*, a superlative combination of arcade and strategy.

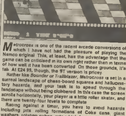
Convinced?

Program *Five Computer Hits* **Type** Compilation **Price** £6.95 **Supplier** Beau Jolly 29A Bell Street Reigate Surrey RH2 7AD

An interesting mix on this one: *Killer Tomatoes*, *Mantronix*, *2112AD*, *Startrike II* and *Wizard's Lair*.

Top Twenty charts will return next week





Metrocross is one of the recent arcade conversions of which I have not had the pleasure of playing the Namco original. This, at least, has the advantage that the game can be criticised in its own right rather than in terms of how well it has been converted. On those grounds, it's fab. At £24.99, though, the ST version is pricey.

Rather like *Bounder* or *Trailblazer*, *Metrocross* is set in a surreal landscape of chess-board squares and hallucinatory hazards, and your task is to speed through the landscape without being clobbered. In this case the screen scrolls horizontally, your player is a little roller skater, and there are twenty-four levels to complete.

Racing against a timer, you have to avoid hazards including pits, rolling formations of Coke cans, giant washers, rotating cubes, rats which fasten themselves to your shoulders and have to be shaken off, green squares which slow down your progress, and exploding manholes. To aid you there are skateboards which can increase your speed, trampolines which allow you to leap long distances (if your timing with the fire button is correct) and cans which can be kicked or jumped on to gain points or slow the timer.

Probe's conversion is colourful, fast, and very playable. Like many ST games, the scrolling seems to flicker when there are a lot of animated objects on the screen, but it's nothing serious. Good use is made of the ST's graphics, though the sound and music are average.

Commodore 64, Spectrum and Amstrad versions forthcoming; it will be interesting to see how they measure up to the excellent ST version.

Keep it simple

I was rather disappointed – to say the least – when I found that my copy of *Leather Goddesses of Phobos* didn't contain an inflatable doll (of the masculine kind of course). It's the least one could expect from such a lewd and licentious game. Not even a whiff of leather pants!

Instead I had to content myself with a pair of 3D glasses, a scratch 'n' sniff card and a 3D comic which made my eyes go cross-eyed whether I was wearing the specs or not. As for the scratch 'n' sniff card, it just made me feel nauseous. Such is life.

Though *Leather Goddesses* is typical of Infocom adventures, it also represents a distinct trend in computer games. No sooner do you open a computer games package these days than a miscellany of extraneous matter (the less generous would say 'garbage') leaps out at you.

Somewhere beneath the copious play guide, the iron-on logo, the A3-sized poster, you eventually find the cassette or disc – yes, that's right, the reason you bought the package in the first place.

Woe betide you, however, if you're ever foolish enough to expect everything to go back in the box just as you found it. The package designers, it's clear, go to amazing lengths to ensure that what they include in the package automatically expands on opening. Consequently, it's just about impossible to get everything back in!

Take *Brian Clough's Football Fortunes* for example. The board is a brilliant piece of lateral thinking. But after one has divided all the player cards where the hell does one put them?

And if it's not novelty it's novellas, the kind that Rainbird, for example, is so fond of! Now Rainbird adventures are some of the best, but their novellas? Pass me the waste paper bin quickly.

What's even more infuriating is that you have to flip through these turgid literary impostors just to get into the game. (Come back Lenslok, all is forgiven.)

So the question that must be addressed to the computer games industry is this: Are all these extra bits and pieces really necessary?

The answer is bound to be ambivalent. In *Hollywood Hijinx* (one of Infocom's more recent adventures) for example, enclosed in the package is a letter from Aunt Hilde, garde and a signed photo of the famous Buddy Burbank. But what one is supposed to do with the plastic tree that is also included – stick it in a cocktail?

Some would argue that such material helps to give credence to the fictional world of the game, and there's a certain amount to be said for that. Such material definitely helps some players feel their way into their assigned role. But without novelty or novella would it not be possible to buy these already expensive games that much cheaper?

The fact is, whether *Leather Goddesses* contains a blow-up doll or not, it's the game itself that gives value for money and not all the accessories that come with it!

Julia Runcieman

Puzzle No 256

Jamie was investigating the properties of nearly equilateral triangles. A nearly equilateral triangle is one in which the sides, instead of being equal in length, differ by just one unit. In addition he was only interested in those triangles that had an area of an exact number of square units.

The smallest such triangle therefore is one with sides of 3, 4 and 5 units and an area of 6 square units. But surely, you will argue, a triangle with such dimensions is nowhere near an equilateral triangle.

To this argument Jamie would agree, but the next largest triangle in the series (and remember we are only interested in those triangles with areas of an exact number of square units) is one with sides of 13, 14 and 15 units. By the time we reach the third triangle in the series having sides of 51, 52 and 53 units, only close measurement would differentiate it from a true equilateral triangle.

Can you determine the fourth triangle in this interesting series?

Solution to Puzzle No 251

Jim was born in 1949 when Bill was 36 years of age. Bill's birth year was in 1913 when his father Joe was also 36. Therefore Joe was born in 1877.

Starting with the current year as Jim's year of birth, Bill's age is calculated using the loop M. All possible ages are then subtracted from Jim's date of birth to find Bill's date of birth. This date is then tested in the subroutine for primality. If it passes this test, the procedure is repeated with all possible square ages for Joe.

The first set of figures with all dates prime and both differences square are printed out.

Winner of Puzzle 251

This week's winner is Helen Truby of Chester, who will receive £10.

Rules

The closing date for Puzzle 256 is May 28. Answers should include a program listing if possible.

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